RICKER LIBRARY ARCHITECTURE
UNIVERSITY OF ILLINOIS

The Builder

INCORPORATING ARCHITECTURE & THE BRITISH ARCHITECT

Vol. CC. January 6th 1961 No. 6138

Published from 'The Builder' House, 4 Catherine-street, Aldwych, London, WC2. Telephones: Temple Bar 6251-4.

Annual subscription rate: £4. Special rate for Students following an approved architectural or technical course: 30s. Single copies (including back numbers, where available, up to 12 months old) 1s. 6d. (post paid 2s.). Indices free on application.

Principal Contents

ILLUSTRATIONS

PAGE

5 Imperial College, Physics Department. By Norman & Dawbarn
12 Fulbourne LCC Estate, Stepney. By Stillman & Eastwick-Field
15 Prototype Low Cost Housing. By J. E. S. Glover
16 Newspaper Branch Office, Wellington. By H. Marcus Brown & Lewis

ARTICLES

4 'Let Our Cities Live': Bow Group Pamphlet on Planning
9 Modern Architecture: The Decisive Decade. By W. A. Allen
11 Letters to the Editor
16 Multi-Storey Garage for St. Marylebone
18 Competition News: Piccadilly Circus Replanning
18 New Year Honours: Awards to Building Industry
19 Architectural Misconceptions of Engineering
21 More Everyday Things—23. By Arthur W. Kenyon, CBE
22 Obituary: Sir Ninian Comper, F. X. Velarde, L. A. Culliford
23 Surrey Concern at Planning Appeal Delays
24 Modern Building and Its Control: By F. D. Entwisle

Leading Articles

Statutory Control of Building

NOTWITHSTANDING the great changes in building materials and techniques in recent years, the local government machinery of control has changed but little since building legislation was first introduced. Hence the importance of the Public Health Bill which is now before Parliament. An outstanding task of the Minister is to decide how far control of building standards by law should go under modern conditions. Many competent persons hold that the requirements for the submission of plans and particulars need drastic but careful revision to meet the challenge of our times.

In a paper which he read a few months ago on the subject of 'Modern Building and its Control' to the Institution of Municipal Engineers' Northern District Summer School at Sheffield University, MR. F. D. ENTWISLE, ARICS, etc., made a number of valuable suggestions for reform. The substance of these is given in extracts from the paper on page 24. It will be seen that Mr. Entwisle not only suggests that the present by-laws are in urgent need of revision in many matters of detail, but makes out a case (as others have done) for a national code of building regulations in place of by-laws, urging that this would allow more elasticity of control than does the existing system of a model series modified to varying degrees by the different local authorities. He points out that since all local authorities have virtually the same problems there is no justification for the minor variations that now exist. It is true to add that, as stated by Mr. G. H. Barrett in a recent letter ('The Builder' of December 23) there is a contrary view.

In view of the fact that the present building by-laws have only about two years to run before falling due for revision, his suggestions as to the procedure for the preparation of a code of building regulations appear to be very much to the point. The experience of Scotland, where such a code is already in operation, would no doubt be helpful to the representative committee entrusted with the task of drafting.

In the earlier part of his paper, which pressure on our space prevents us from quoting in full, Mr. Entwisle stressed the point that the administration of such a code of control for modern construction now calls for a combination of officers with not only a wide knowledge of building but of structural theory and strength of materials, including high qualifications in engineering and building surveying in its widest sense. He holds that any new or altered method of control could not function adequately with existing staffing arrangements, and he suggests that staffs should be graded in areas of control to suit the circumstances and so avoid highly-qualified staff having to spend time on minor projects. This is a matter of administration where the staff is adequate, but there can be little doubt that with the greatly increased part played by engineering in building construction, many more qualified engineers will be needed for the work of control.

Our tradition of good building must be maintained, and the two essentials on the administrative side are a set of regulations adapted to the needs of modern building and adequate and efficient technical staffs for the work. Mr. Entwisle's suggestions to these ends are valid.

The Allied Societies' Conference

READERS, and particularly those in the provinces, will have taken note of the brief report on liaison between the RIBA and the Allied Societies in our recent issue, in which the position of the Allied Societies' Conference was touched upon. It is not by any means the first time that this much criticised body has been under fire, nor will it be the last, and it need not be assumed that its days are numbered.

The Conference has one of those untidy constitutions beloved by the British people, and like the British Commonwealth of Nations—the untidiest of all—it has survived and grown in vigour through several generations. We are, in fact, an untidy people, as any business man will know who has lost the vital letter he placed on the left hand pile on his littered desk, through its having been filed in its proper place.

The Conference is neither a Council, nor a Standing Committee, nor a Parliament, though it resembles each in some way or other. The RIBA exercises each of these functions in a very able way. Why should there be any fuss about putting this strange other body into its orderly place?

Some in the profession fear that it springs from an uncomfortable feeling that there is a gulf fixed between the metropolitan architect and his opposite number in the provinces, and that central policy tends to become moulded to the London pattern to the detriment of the provincial. It may be that there is something in this suspicion, though it certainly has less validity than in those distant days when architectural education was centred largely in London.

But grievances die hard, even though they may have been partially met, and so long as they persist it would be fatal to drive them underground. The feeling is inescapable that the Allied Societies' Conference has proved itself an excellent forum from which the provincial architect can make his voice heard. The fact that it has no executive powers is its strength rather than its weakness, and its history records many cases when its voice of reason has been so strong as to influence central policy. No doubt it has frequently generated more heat than light, but that charge is true of many other fully responsible bodies, of which neither Parliament, nor the District Council, nor the RIBA Council itself could claim to be innocent. The improved air-conditioning at Portland-place is quite capable of dealing with hot air. Is it not better to leave matters as they are, and to let professional politics work it out in an illogical and endearing British way?

Notes of the Week

Official Work and Private Architects; New Year Honours; Tribute from Abroad; A Call to the Ladies

SCARCELY A WEEK passes without its report from one part or another of the country of local authority schemes held up for lack of architectural staff. Latest on the list is Newport, Mon., which (our local correspondent reports) is six months behind schedule in its architectural work. there being no fewer than 17 vacancies for architectural assistants. The council is trying to attract suitable men by offering special benefits and concessions: meanwhile it is engaging the help of architects in private practice.

Monmouth, and other local authorities which are feeling the effect of the current shortage of good assistants, might well consider whether the action of putting work out to private practitioners, forced on them by events, is not a pointer to the way things should normally go. As local citizens and ratepayers, private practitioners have a right that is almost prescriptive to share in the architectural work put in hand by their local authorities; in most cases they have the knowledge and ability to undertake the work and see it through speedily to completion. The present situation where there seem to be too few competent assistants to go round is one where collaboration between official and private architects should be the watchword—a collaboration inspired not only by expediency but by justice and commonsense. The alternative is an intensified scramble for assistants.

Lord Mottistone (OBE)

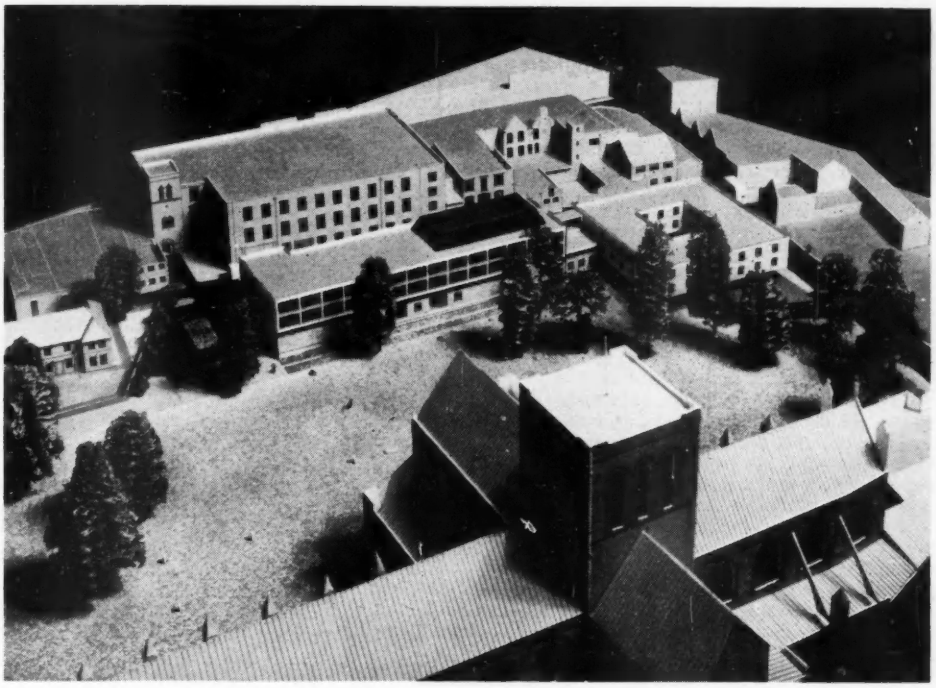
N. Stanley Farrow (OBE)

New Year Honours

THE NEW YEAR HONOURS LIST, not in general remarkable for its interest, yet contains the names of a fair proportion of men who contribute to the arts of building. Architects especially are recognised; Mr. G. A. Jellicoe and Mr. A. G. Jury both receive the CBE, the former for his fine work for the new profession of landscape architecture, Mr. Jury for his sterling administration of the architectural and planning department of Glasgow Corporation. Of the OBEs which go to architects, one appropriately enough is conferred on Lord Mottistone, who designed the chapel and screen of the Order of the British Empire in St. Paul's Cathedral; the other on Mr. E. le B. Henderson, for services to architecture in Western Australia. The MBE goes to two architects: Mr. H. H. Powell who, as architect to the Eastern region of British Railways, has played a fine part in the renaissance of railway architecture in this country; and Mr. K. A. R. Purdom, senior architect, department of works and buildings, the Federation of Nigeria.

* * *

THE NET IS SPREAD widely over the industry, however. Mr. R. A. Penrose, chairman Institute of Contemporary Art,



PROPOSED HOTEL, WINCHESTER: *The Dean and Chapter of Winchester have leased a site fronting and to the north-east of the Cathedral Close, in part in use as a car park, to Trust Houses, Ltd., for the erection of a 3-storey hotel, with 79 bedrooms, estimated to cost £250,000. The hotel, which will occupy two buildings forming an L-shaped block, may be backed by a new store at the foot of the High-street. Architects for the hotel are Messrs. Feilden & Mawson, of Norwich, with Mr. Lionel Brett as consultant. The council recently engaged the services of Mr. Peter Shepheard, FRIBA, as consultant for various schemes of development proposed in the city, and he is advising on the general layout of the hotel scheme*

and Mr. G. E. Watts, Principal of Brighton Technical College, received the CBE, while the devoted work as MoW Librarian and in international documentation of building information of Mr. B. Agard Evans is acknowledged with the OBE. Few builders appear in the current list but Mr. Stanley Farrow's promotion to OBE will be received with enthusiasm; his visit to Australia as representing the National Federation, as also his work for improving management techniques, have been real contributions. Mr. William Wilson, the veteran artist in stained glass, also is awarded the OBE.

* * *

OF THE MBE'S, two go to trades unionists, Mr. David Crawford, of the ASW (Birmingham branch) and Mr. J. M. Scott, of the N. Ireland Plumbing Trades Union. The secretary of the Lancashire branch, CPRE, Mr. P. A. Baines, also receives the MBE. Finally, in a somewhat different sphere, the MBE goes to Mr. G. B. Mason, staff photographer to the National Buildings Record. To those mentioned as to all honoured (a fuller list is on page 18) go sincere congratulations.

Tribute from Abroad

THE EYES of the architectural world sometimes overlook Great Britain's achievements in the planning field in favour of the glossier efforts of other countries more in the sunlight. A comment made by Professor Rudolf Hillebrecht in a recent letter to Professor Denis Harper is therefore heartening. Hillebrecht writes: 'The new capital of Brasilia is an admirable fact, but I should like to see again this work 10 or 15 years later. I think the British city planning work is much more serious and more fertile for the people and for mankind than this brilliant phantom in the wilderness. The residential areas are inhuman, dry and without any relation to the human scale; they are not able to create a society.'

This opinion by Hillebrecht, whom many regard as a brilliant tactician and organiser who produces a high standard of non-glamorous work, is interesting; northern architects will recall that he came to Manchester only recently to lecture on the ten years of work carried out in the reconstruction of Hanover.

* * *

IN SENDING THIS NEWS, Denis Harper also gives the information that Manchester College of Science and Technology is in process of establishing a course on Building Management. No details can be given until proposals have the blessing of the Faculty, which we shall hope may be soon.

A Call to the Ladies

THE LADIES' COMMITTEE of the IUA Congress is hoping to recruit help in entertaining and acting as guides to the wives of foreign delegates during the run of the Congress (June 29 to July 7, in London). Several outings have been arranged, including shopping expeditions, a visit to Hampstead, the National Gallery and so on, and about 100 ladies are needed to help for some part of this time. Dates will be arranged later to suit their convenience.

The social side of international congresses such as this is no less important than the business sessions (some would say it is more valuable) and volunteers (who may be but need not be the wives of architects) should get in touch with Mrs. Mead, secretary to the Ladies' subcommittee, IUA, at the RIBA, 66 Portland-place, W1.

Commonwealth War Graves

THE FORTY-FIRST annual report of the Commonwealth War Graves Commission includes a description of its work in nearly all parts of the world together with a colour frontispiece and twenty-four photographic illustrations of war cemeteries and memorials. There is a foreword by the Commission's vice-chairman and a statement of accounts. The report is obtainable, price 2s. 6d., through any bookseller, from HM Stationery Office, or from the Commonwealth War Graves Commission, Wooburn House, Wooburn Green, High Wycombe, Bucks.

Poet's Corner

IN A pamphlet entitled 'Let Our Cities Live,' the Bow Group suggest that New Cities in Lincolnshire and the West Country are now needed to cope with our expanding population.

New Towns have been a great success;
New Cities now, and nothing less,
Must rise to take the overspill
Of people, factory and mill.
None can deny our growing nation's
Need for greater conurbations.
When all the green and pleasant land
Is well and thoroughly town-planned
Behold the fate of your and my land—
This tight, and tighter, little island:—
To cope with the expanding host
We build on piles around our coast;
We fuse with Ireland—all in vain,
And start expanding once again;
Till, in a final effort frantic,
We build across the whole Atlantic,
To join at last—ah, happy day!
The land mass of the USA!
Achieved our destiny (or fate)
To be US's newest State!

ANON.

'Let Our Cities Live'

Bow Group Pamphlet on Town Planning

BIG CHANGES in the present system of town and country planning are advocated in a pamphlet now published by the Conservative Political Centre on behalf of the Bow group. The principal theme of its authors is that 'planning in Britain seems to have become a vain struggle against the growth of cities rather than an acceptance of them as providing most of the possibilities and promises of modern civilised life.' The Group proposes 'that we shake off the image of the conurbation as a Victorian horror' and begin this process by putting right its three chief faults: slum and near-slum buildings, deplorable and worsening traffic conditions, and the shortage of public parks and playgrounds.

The pamphlet points out that central redevelopment at the speed which will be necessary for a city's survival will be very costly, and not to enlist the aid of private money would be silly. But under existing law only a body vested with compulsory purchase powers can be certain of getting together a large site for redevelopment.

The authors therefore propose a land pooling system—'although this is revolutionary to the concept of British property ownership, it is nothing new in some other countries'—under which a block of property physically and economically obsolete could be declared a 'redevelopment block' upon application to the courts by, for example, over half the owners involved.

The pamphlet also proposes that local housing and planning authorities should, with the approval of the Ministry of Housing and Local Government, have power to declare 'improvement areas' where they consider run-down residential areas could be saved from becoming slum areas by a concerted effort to improve the property and the environment. Local authorities, say the authors, should be able to enforce certain standards of improvement and the existing improvement grant funds should be used to assist owners with up to half the cost.

To deal with the traffic problem, the pamphlet advocates the improvement of suburban and underground railways; a carefully planned system of fast urban roads; the segregation of pedestrian from motor traffic wherever possible; and the restriction of street parking and the provision of off-street parking nicely geared to the capacity of the planned road system. To ease congestion by spreading the traffic load, the authors would also like to see the dispersal of the main centres of employment throughout the whole area of the conurbations, and an increase in the residential population of city centres.

The pamphlet describes the present green belt policy as out-of-date. 'With our cities continually growing, the green belt eventually becomes a "green noose" against which the pressure is so strong that either building is bound to be permitted within it, or else development will jump over it and continue beyond. In the latter case, and there are signs that this process has already begun, the function of green belts immediately becomes something absurd, that of a large green "distance piece" between two sections of the same conurbation: the sense of community, so vital a part of city life, is lost, and the endless sprawl continues at one remove.'

The authors suggest that each green belt must be vigorously reshaped to allow fingers of high density development to reach out into country parkland and permit wedges of green parkland to penetrate to the centre of the city.

The pamphlet proposes, as the only way of solving the overspill problem with reasonable speed, the establishment under Government auspices of two new cities, each planned for an ultimate population of at least 300-400,000. One would be in Lincolnshire, to relieve the population problems of Birmingham, Manchester and the North, and another in the West Country to relieve population pressure on the London Area.

The present planning structure of local government is severely criticised by the authors, on the grounds that 'it is too limited to manage large-scale planning and yet too cumbersome for local problems.' They also suggest that the Ministry should again include the word 'Planning' in its title.

The pamphlet, price 2s. 6d., may be obtained from the Conservative Political Centre, 32 Smith-square, London, SW1.

Multi-storey Garage for St. Marylebone

Compulsory Purchase Order Confirmed

THE MINISTER OF HOUSING AND LOCAL GOVERNMENT, after consulting the Minister of Transport, has confirmed a compulsory purchase order made by St. Marylebone Borough Council for the acquisition of a site in Wells-street, London, W1, for a multi-storey garage and service station which it is proposed to provide to complement the introduction of parking-meter control in the area north of Oxford-street. A public local inquiry into an objection to the order was held in July.

The objection came from Celus Properties Ltd., who, by the time the order was made, had started to build a block of showrooms on the site. The building was begun after the council had announced that it was considering making a compulsory purchase order. At the inquiry the council said it thought the building could be converted into a multi-storey garage.

The decision letter says: 'The Minister consulted the Minister of Transport, who laid great stress on the urgent need to control street parking and to relieve congestion in central London, and supported the council's contention that the site would be used for the provision of a multi-storey garage without generating any additional traffic problems in the adjoining streets. After careful consideration the Minister is satisfied as to the urgency of the need to provide off-street parking facilities in this area and considers that they can be provided on the order site in conjunction with parking-meters without adverse effect on the flow of traffic.'

The Carlton Tower Hotel, Cadogan-gardens, London, SW1, was opened on January 4. The facing material, which consists of ashlar work in Portland stone, was carried out by the Bath and Portland Stone Firms Ltd. in slightly under the contract period of six months. The hotel was designed by Mr Michael Rosenauer, FRIBA

Imperial College, Physics Department

NORMAN & DAWBARN, architects

WILLIAM C. INMAN & PTNRS., quantity surveyors

JOHN LAING & SON LTD., general contractors

elevation to Prince Consort Road

THE PHYSICS BUILDING is a part of the Imperial College Jubilee development scheme and has been built on the north-west corner of the island site. The building is 12-storeys, and houses the complete activities of the physics department, both for teaching and research.

The structure is steel framework with reinforced concrete floors. Most of the windows are mahogany framed 'Carda' windows. Spandrel walls are brickwork faced with green Swedish tiles, and columns are faced with white glass mosaic. The south end of the high block is designed for future extension and has a temporary external fire escape.

Teaching facilities are provided for 350-400 undergraduates. The main entrance in Prince Consort Road leads into a two-level entrance hall. On one side is the large lecture theatre seating about 250 people and on the other is the two-level department library. The lecture theatre is provided with a separate projection room and a demonstration bench with controls for lighting and ventilation and if necessary slides, when the use of a projectionist is not justified. The whole of level 3 has been planned with a view to the holding of scientific conferences as well as normal department use. In addition, there are two smaller lecture theatres seating about 150 people, which are intended primarily for lectures to undergraduates. The other principal parts of undergraduate teaching, practical physics classes, are on level 4. The lecture theatres and teaching laboratories have all been grouped within easy reach of one another and the main entrance hall, in order to avoid heavy use of the lifts by the undergraduates.

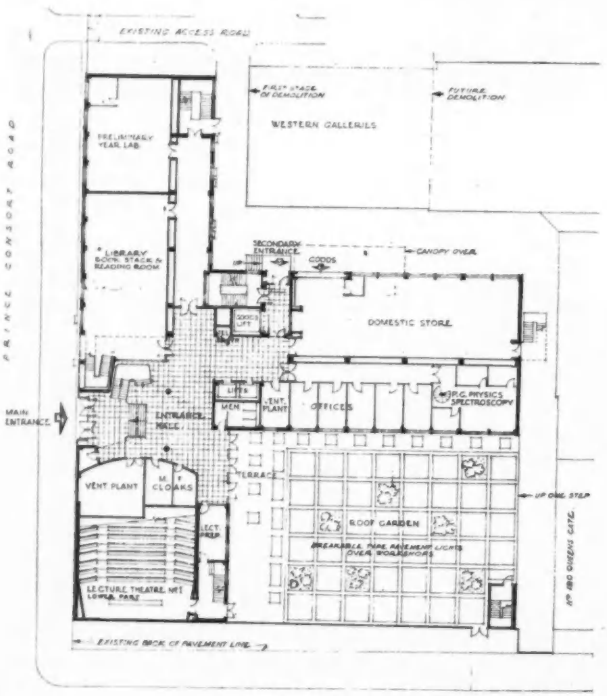
Post-graduate teaching and Research is generally at level 5 and upwards with a few large laboratories at level O. Level O contains those with special requirements such as headroom of 20 ft. for especially large apparatus, free from vibration and large temperature fluctuations. The largest area of level O is occupied by the main departmental workshop. This lies below the Queens Gate courtyard and has extensive overhead natural lighting.

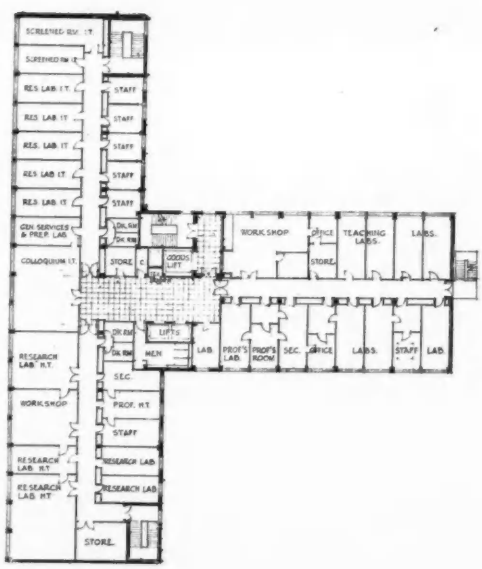
On level 8 is the common room for academics and technical staff and all post-graduate workers. This opens on to a terrace which has views over Kensington and most of London.

Level II is the Cosmic ray research floor and a special roof has been designed for this section.

A frieze over the main entrance was executed at the RCA by John Skeaping, ARA.

courtyard roof garden over the departmental workshop



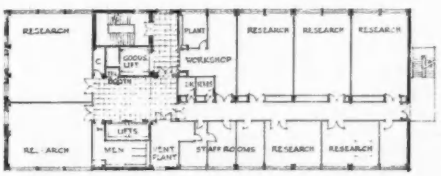


LEVEL 2 & LEVEL 7
Scale : 1 in. = 64 ft.

entrance hall

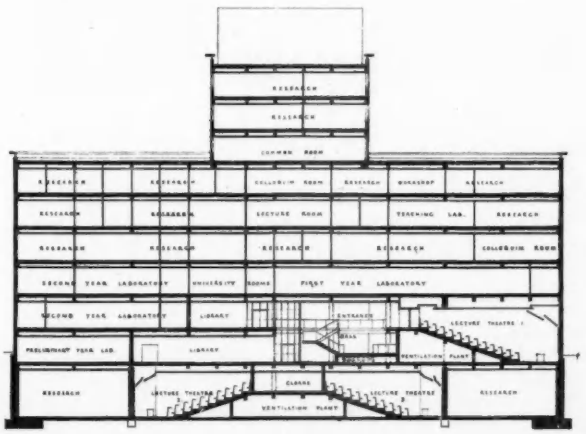
upper level entrance hall

common room and (below) terrace windows



LEVEL 9

SECTION
SCALE :
1 in. = 64 ft.



above, the main lecture theatre at level 2, seats 250. There is a separate projection room, and the demonstration bench is fitted with controls for lighting, ventilation and projection slides. Right, a typical laboratory

Imperial College, Physics Department

sub-contractors and suppliers:

Reinforcement: Rom River Co. Ltd.; *structural steelwork:* Redpath Brown; *external tile facings:* supplied by Langley London Ltd., fixed by Wilson and Wylie; *'Saivo' mosaic:* fixed by W. B. Simpson; *Portland stone:* South Western Stone Co. Ltd.; *facing bricks:* supplied by Proctor and Lavender, Sussex and Dorking; *'Carda' windows:* Holcon Ltd.; *metal windows:* Williams and Williams; *curtain walling:* Holoplast Ltd.; *glazing:* Aygee Ltd.; *glazed screens and entrance doors:* Harris-Sheldon Ltd., Ajax Aluminium Ltd.; *pavement lights:* Lenscrete Ltd.; *asphalt:* Neuchatel; *roof paving:* J. B. Abbott and Co. (plasterers) Ltd.; *heating, hot water and ventilation:* Sulzer Bros. Ltd.; *ceiling heating:* Stramax (G.B.) Ltd.; *plumbing installation:* R. J. Audrey; *electrical installation:* Drake and Gorham; *lifts:* Otis Elevator Co. Ltd.; *'Hyrib' lathing:* Truscon Ltd.; *fibrous plaster and suspended ceilings:* Clarke and Fenn Ltd.; *marble wall linings:* Anselm Odling; *plastering:* R. Whetstone and Co. Ltd.; *terrazzo work:* Mosaic and Terrazzo Precast Co. Ltd.; *wood block and strip flooring:* Hollis Bros. Ltd.; *linoleum flooring:* Catesby's Ltd.; *cork flooring:* Limmer and Trinidad Co. Ltd.; *'Korudor' flooring:* Prodorite Ltd.; *flush doors:* Southerns Ltd.; *lecture theatre seating and library fittings:* George Hammer and Co. Ltd.; *laboratory fittings:* Armstrongs (Hull) Ltd.; *sanitary fittings:* Stitsons Sanitary Fittings Ltd.; *steel partitioning:* Sankey Sheldon and Co. Ltd.; *steel roller shutters:* Dennison Kett; *metal balustrading:* Light Steelwork (1925) Ltd.; *screened rooms:* Belling and Lee Ltd.; *light fittings:* Ekco, Atlas, Merchant Adventurers, G.E.C., Frederick Thomas; *lightning conductors:* W. J. Furse and Co. Ltd.; *internal telephones:* A.E.I. Ltd.; *collapsible metal gates:* Bolton Gate Co. Ltd.; *speech amplification equipment:* A.E.I. Ltd.; *travelling cranes:* Herbert Morris; *ironmongery:* Lockerbie and Wilkinson; *Assa lock sets:* Bell Donaldson; *cloakroom fittings:* A. J. Binns Ltd.; *aluminium skirtings and special extensions:* Northern Aluminium Co. Ltd.; *acoustic panelling:* The Tentest Co. Ltd.; *polishing:* J. R. Beadon Ltd.; *decorating:* J. H. Magor Ltd.; *cement glaze:* Robbs Enamel Ltd.; *paint:* Hadfields, I.C.I.; *blackout blinds:* Tidmarsh; *blackboards:* Tabula Chalkboards Ltd.; *projection screen:* The Perforated Front Projection Screen Co. Ltd.; *cycle racks:* Le Bos Tube Co. Ltd.

Modern Architecture: The Decisive Decade

By W. A. Allen, ARIBA

Author's Note: This is the text, edited for publication, of a lecture which concluded a series of six by various authors, organised for the autumn of 1960 by the University Art Lectures Committee of Bristol University, with Professor W. O. Stewart, Chairman of the Department of French, in the Chair. The lecture will be concluded next week.

THE DECADE just concluded has seen a new and important stage reached in the relations between contemporary society and its architecture which it seems worthwhile to recognise for the sense of direction it may give as we enter the 1960's. However, there is a particular view of the history of architecture as a whole which is fundamental to the understanding of our position today and which it is therefore desirable to mention at the outset.

The roots of architecture so far as they have been laid bare are somewhat more than 5,000 years old and lie in the Eastern Mediterranean basin. Growth took place mainly in three regions: Europe, China and India, of which the European development proved to provide the main line of development to the contemporary concept of architecture. Of several reasons for this the chief is probably the fact that science developed first in Europe and it is science which is the foundation of the modern world, and hence of its architecture.

Until the end of the Medieval world, the European growth was a continuous stylistic evolution, each new idiom emerging naturally from its predecessor as if it were new growth on a vine. It was a mainly stylistic development because the materials of construction and the types of buildings needed by society were limited in scope and altered very little over long periods. This long steady growth, culminating in the Gothic, came to an end as the medieval outlook itself collapsed towards the end of the 16th century.

A New Understanding

The new freedom of mind which marked the advent of the 17th century was soon to demonstrate that it made possible an entirely new level of understanding and control of nature and the material side of life. It was discovered that knowledge could be powerfully advanced by free speculation and experiment, a technique which has become now the mainspring of life in the modern world. To us it is a commonplace though it has still to be fought for sometimes; to the 17th century it was a new and exhilarating experience.

A great efflorescence of literature and music accompanied the pursuit of science, and a new way of government began to stir. Much of the inspiration of this period was derived from studies of the classical world, when freedom of the mind had last been fully enjoyed; and naturally enough, the architecture which had environed the life of Greece and Rome became part and parcel of its influence. This Renaissance as it came to be known lasted a little over two centuries, roughly until science and technology had reached a point of development where they were beginning to alter the social scene radically.

In the early years of the 19th century the numbers and types of buildings needed by society began to expand rapidly, and for the first time in fifteen hundred years methods of construction also began to alter in important ways in a complex interplay of cause and effect. The renaissance of classical design of its nature had been something of an anachronism in history, charming as it was, and now in the mêlée of social and technical change it lost its relevance to the new problems and techniques and its capacity to satisfy the minds of the times. Its emergence 200 years before had marked a major turning point in the development of men's minds, but the mechanism of society nevertheless had continued to rotate then much as before. Now the mechanism itself was in fragments and a new and much more elaborate one began to take its place which is still working itself out.

A Period of Conflict

The disturbance of society by science and industry in the 19th and early 20th centuries was too deep and prolonged for an orderly architectural development to have been possible. The arguments about religion, philosophy, science, industry and government were violent and strong surges of feelings and action occurred. It is not conceivable that it could have been a period of anything but conflict in the arts, and in fact what happened in architecture can be seen now to have been an astonishingly faithful reflection of the life which brought it into existence. There was the continuing thread of a rational outlook and art based on classical thought, attacked as pagan and immoral by others who believed that the gothic conduced to a medieval and necessary priority of dependence on faith, while both these points of view were held to be irrelevant in differing degrees by a third stream—scientists, engineers, some artists and architects who in their various ways were beginning to come to terms with the industrial and philosophic consequences of science.

It is in some ways difficult to see the pattern of the social struggles of those times clearly unless they are studied with the help of the arts. Certainly it is impossible otherwise to see it completely, and by this fact we are reminded that architecture as a whole cannot develop except as the image of its times, even though this is difficult to visualise or appreciate at the moment of creation; and conversely, that we can only have an architecture that is great, or endearing or has other particular qualities to the extent that society itself makes it possible through its own development. It is no good people railing at the arts and artists; they neither shape society unaided, nor can they wander off long by themselves; they are inescapably an expression of us and our way of life.

These are facts to which one must hold fast in order to see the architecture of very recent years with some sense of perspective.

The Opening of the Decade

The Festival of Britain is now a decade behind us. In these islands it accompanied a moment of excitement and change later identified with much talk of a second Elizabethan era, but elsewhere in the world it was a time of significance too. Perhaps the most obvious reason for its importance was that it took the preceding four or five years to get over the worst hurdles of post-war reorganisation and settle down to conditions in which architecture of any sort could reasonably be expected to thrive; but there was a deeper cause than this, for the architects upon whom responsibility now began to fall were the first generation educated to look at architecture not primarily as a problem of style but as a process of integration for which planning requirements, economic argument, function, method of construction and other such factors had first to be analysed. Imperfect as their education was in some ways for this approach, it brought them closer to society than their predecessors had been. Before the war they had had few opportunities of any consequence in which to use their new outlook, but during the war many of them discovered its value in a hard school of experience, and afterwards this generation faced a world that was ready to use them, though neither they nor it were sure of this at first. By 1951, the Festival year, the mutual confidence essential for good architecture had some solid foundations.

The Exhibition itself is no longer to be seen but most will still recall the clean-lined, gay, sometimes impressive, always interesting buildings and settings that rather wonderfully appeared and so quickly and with one exception, sadly disappeared from the South Bank. One need not dwell upon them as buildings, but there is this outstanding point to be remembered. The public in this country had been offered for the first time a full-scale display of design by this new generation, and they liked it. An idiom which had emerged from prolonged intellectual argument, often rather aridly expressed before the war, had now developed to a point where it could capture and express warmly the feelings of people. The one permanent building, the Royal Festival Hall, with its instant and continuing popularity stands as witness.

As a matter of fact the country had been treated to some foretaste of all this in what was to become one of the major

achievements of post-war architecture in the world, the schools programme. Mr. Denis Clarke Hall had demonstrated a new way of school design at Richmond in Yorkshire, just before the war, as a result of the famous 'News Chronicle' competition. The post-war movement took appreciative note of this, but had its own particular beginning in the effective group of people who came together in 1946 and 1947 around Aslin and S. A. W. Johnson-Marshall in the Hertfordshire County office, who looked at matters somewhat thus: There would have to be hard programming if the supply of new school places was to match even the predictable needs. Housing had first call upon the resources of conventional building, so it would be sensible to try to use excess factory capacity inherited from the war and work with a generous measure of prefabrication; but if this was to be a versatile and architecturally satisfactory medium it would have to be developed by architects and industry together. Cost planning would have to be much more accurate than formerly. Architects and educationists would have to work intimately together to make design at once more efficient and more flexible for education.

Work on Schools at BRS

Those who had the privilege to work with that group, and we at the Building Research Station were among them, find it easy still to recall the spirit of those early, strenuously creative days. The first piece of the first newly developed system was on the ground at Cheshunt roughly twelve months after the team was formed, and a whole programme had begun to gather momentum.

The character of the new schools appealed at once to most of those who encountered them, teaching staff, children, parents and other architects. An unselfconscious simplicity, an easy and direct expression of construction, the effective planning and functional qualities, a certain elegance, an invigorating use of colour, and the sense of integrated design all carried conviction, much as the Festival itself later did. Children and staff reacted favourably in an educational sense and it is not surprising that the idea and the way of doing it spread rapidly to other parts of the country, actively encouraged by the central government. By 1951 results were to be seen in many areas, and now they are widespread.

This schools 'movement,' for that is what it was, seems likely to find a significant place in history for several reasons.

First, it did not consist of occasional or 'set-piece' architecture, but of whole swarms of buildings so naturally produced as almost to seem like vernacular work.

Second, there has been no straining to be original and seek arbitrary aesthetic objectives. The designs grew out of the integration of requirements.

Third was the concept of development, which inspired the whole approach. The term implies several things—a team generally incorporating at least design, client and finance in some form, so that policy and design keep in step; and continuity of demand or programme, for the essence of development is to make successive improvements based upon operational study of previous projects and upon the gathering in of experience and new research results. Development in this context relates not only to planning but to individual products and processes, and by this token brings the builder and the maker of building products back closer towards a partnership with architects. It is generally held to be essential that development groups be not merely advisory but actively engaged in building so that they have the purchasing power and the occasion to bring advanced examples of their ideas into existence.

Fourth, the organisation of the schools programme was an assertion of the idea of architecture viewed as a service for society, much as we now view medical attention. This accords with the fact that it was initiated from public offices, but it prompts notice of an increasingly rapid development of leadership from these offices which in pre-war decades some had begun to show, and it has earned them in Britain a level of esteem not previously attained. A close collaboration between private and public sectors has now developed in this country which is beneficial in many ways to both sides, and incidentally to the public, for organisationally the two now complement one another effectively, and they ensure that the high standard made possible by the specialised study and development work which public offices can afford to do is passed on to the private practitioners who are less favourably placed for this, they being instead in a position where they have to develop versatility. Moreover, the private architect doing work for a public authority with a good official architect is likely to find favourable conditions for his own architecture.

Thus we find introduced into architecture two new ideas, that of design as a service to the community and that of systematic development, the one reflecting advancing social organisation and the other the standard method of industry for creating good quality products. The two are almost interdependent. A dozen or more development groups are now operating in this country though some are still very new.

Development groups are not yet to be found in other countries. However their role in raising the level of professional expertise is potentially very great, and so necessary will this be as other levels of expertise rise in this age of professionalism that they, or something like them, seem likely to become an essential part of the professional mechanism.

Integration the Key

I said that integration was the key to the design of these schools. On another occasion I suggested that a good building might be defined as 'a single organic embodiment of all its technical functions, its planning requirements, and its aesthetic idea,' which is another more explicit way of describing integration. It is doubtful if many architects would quarrel with this definition of a good building, though some are made in such a way that they cannot help letting a particular aesthetic objective form so quickly that integration is prejudiced from the beginning. I believe it is vital to get the technology and functions clear and resolved at the outset so that something like a 'system' of ideas is in existence before letting the aesthetic idea begin to harden. This, roughly, is what integration suggests to me, and I think it leads to a sounder and more truly creative design than does a deliberate but artificial effort to be original.

Integration in America

The American scene, though it does not yet have development groups as we know them, and has few public offices held in esteem, rises to outstanding feats of integration from another starting point, the integrated design office, comprising architects, engineers of many kinds, an economic side, and other professionals needed to make the office virtually complete in itself for the kind of work it does. In the field of factory and office building design the prototypes were such teams as that of Albert Kahn and his associates in Detroit, though even this early group had antecedents in the American scene, for this type of organisation is almost indigenous to America. Such firms created the modern American factory and systematised it, and the result is an exceptionally efficient type of building, contributing materially to the strength and resilience of American industry and surprisingly constant in its programme and character. The main creative work was done before or during the war and lies therefore outside this decade; but this is the type of design office which lies behind the modern American office block, which along with their factories is surely America's outstanding contribution to contemporary architecture.

While its development too took place before this decade, a new turn was given to it in 1951 by the Lever Building, a far more influential structure outside America than most previous office blocks had been. Its newness lay mainly in a new type of site development, its curtain wall, and its standards of integration of structures and services, all of which proved to be sound growth points. Its influence here was helped by the fact that it was almost precisely a statement of what had become possible under the amended planning codes dealing with density of development and daylight, and because its scale was that of the English scene. Bunshaft of Skidmore, Owings and Merrill was its designer and it marked a new stage in the development of this famous firm. It is interesting, in view of what has been said about integration, that along with the architect, W. S. Brown was named as being responsible for 'co-ordination.'

David Medd, in a valuable paper to the Architectural Association read last year spoke eloquently of this firm's work, and gave particular attention to one building, the Connecticut General Insurance Co. of 1954. He described the hard work put into it on the client's side,

with a building committee consisting of the President and Vice-Presidents, who had about 500 meetings spread over several years, continually developing their needs and assessing possibilities; and the building firm was appointed at the same time as the architect so that three-way collaboration took place from the outset. One stated target was a building with 'the nearest thing to no maintenance costs for 50 years, and preferably 75.' A 4,000 sq. ft. mock-up of a typical part of the job was erected beforehand, a reminder of our own concept of development.

Medd speaks of the result as 'a superb example of twentieth century technology and art.' Everything seems to have been brought to an exceptional standard of perfection, including the purely visual qualities of the design, so that all has been fused, as it should be in architecture, into a totality greater than the sum of parts.

While this is a building of exceptional quality, it is an example of an American shift towards rural sites and low buildings. In high buildings they are also still breaking new ground. They have built several which are excellent, and one, the Seagram, which is outstanding. It is a great pity, as Holford said recently, that we have not yet produced a single office building of real consequence in this country since the war. Many are simply watered-down versions of the Lever Building with curtain walls looking very much like architecture-by-catalogue. It is all the more sad in that we in Britain have contributed a great deal to the modern theory of development and use of high buildings in cities through our work on daylight and density control and our approach to civic design.

A major factor contributing to this deficiency is the lack of concern and sense of responsibility for cities on the part of developers. The clients for the Connecticut General were outstanding in degree but not in type. The clients for factories in America are very skilled buyers, looking ahead with a sense of national as well as personal interest in making sound investments. We achieved something similar with schools and sometimes with housing, but not yet with other types. In hospital design it is perhaps the most troublesome aspect at present. Among the outstanding lessons of the decade is the importance of an informed and well-organised client if a building of quality is to be produced. This country as a whole must become a better client for building if it is to have better buildings.

(To be concluded)

Letters to the Editor

The Architect and the Engineer; Edinburgh's 'Package Deal' Contracts and the RIBA; Compressed Quantities

The Architect and the Engineer

SIR,—The letter from the President of the Royal Institute of British Architects to certain Borough Councils has started what has been referred to in certain branches of the Press as an undignified squabble between professional bodies. The rejoinder by the Institution of Municipal Engineers brought an aggrieved comment from Sir William Holford regarding differences between professional institutes. A fair analogy seems to be that of the ruffian, who, after knocking down the peaceful passer-by, says, 'Now don't start a vulgar brawl, old man.'

May I comment with the utmost brevity on just three facets?

Is it seriously suggested that an architect working under the administrative control of an engineer is thereby any worse an architect? If it were not so, then the architects' case just falls to pieces.

The second point is, can the architect be an efficient administrator? My experience indicates the necessity of the administrative control of the architect whose training is the very antithesis of economic administration.

Finally, aesthetics. We all have different views, perhaps fortunately so. Who is to be the arbiter? Surely it must be the general public, but it is worthy to note that the architect's designs are those most severely criticised, not only by the public, but also by his fellow architects.

J. B. WIKELEY [MENG, MICE, MIMUNE],
Millthorpe,
Holmesfield,
Via Sheffield.

Edinburgh's 'Package Deal' Contracts and the RIBA

SIR,—The leakage of information that the decision by the Edinburgh Corporation to give building contractors, and not architects, the job of redeveloping the city's pre-fab sites at a cost in the region of £18m. must cause some consternation amongst members of the architectural profession. The second great surprise is that the RIBA appears to have taken little if any action on this all important matter.

One Edinburgh councillor has declared that the committee concerned was 'handing out on a platter, without any competition, contracts involving millions of pounds of the ratepayers' money,' whilst a certain building contractor, who submitted representations to the Corporation on the allocation of contracts, said that the dangers of corruption were severe, and the system an invitation to vice.

Is not this matter one of such importance to the profession that the RIBA should appoint a special sub-committee to investigate and report at the earliest possible moment?

SIDNEY LOWETH [FSA, FRIBA, FRSA],
2 Balfour-court,
Folkestone, Kent.

'Developers!'

Compressed Quantities

SIR,—Having initiated the recent correspondence under this heading I would like to add a few remarks to those of your other correspondents who have commended those building estimators who have written to you digging their toes in on the subject at issue. When all is said, these are the hardworking boys who have to answer the problems set, and we are not unmindful of this.

Nevertheless, we must all grow up, collectively as well as individually. We must see to it that the experience of four editions of the SMM, over a period of now nearly 40 years, is digested into the projected fifth edition. In the 1927 edition dressed stonework was required to be measured in full, including all faces, halfsawing to joints, etc.; but since the 1935 edition it has been sufficient to measure by cube in various classifications. Why, therefore, in brickwork, should not all common labour such as oversailings, offsets and ordinary building-in of ends, etc., be absorbed into the price for bulk brickwork? Again, in structural steelwork the specialist is, under present rules, sufficiently informed to price; for example, compound stanchions including caps, bases, shelf angles, etc., in one item. Why, therefore, cannot the general contractor, a specialist in traditional construction, be required to price, for example, all pitched-roof timbers (except perhaps trusses) in one omnibus cube item?

Again, it is time that many descriptions were compressed. Why should we not, for instance, dispense with the tautology of 'Return and fill the best of excavated materials in layers not exceeding 9 in. around foundations and well ram,' and content ourselves with 'Backfill around foundations'?

S. W. HOOKWAY [FRICS],
Bristol.

(Other letters are held over until next week.—Editor)

Appointment

COVENTRY CITY COUNCIL have appointed Mr. F. J. Lever to the post of Housing Director.

Fulbourne LCC Estate, Stepney

STILLMAN & EASTWICK-FIELD, architects
FELIX J. SAMUELY & PARTNERS, structural engineers
WATES LIMITED, general contractors

THIS HOUSING SCHEME for the LCC, on the site of St. Peter's Hospital, Stepney, consists of a 4-storey block containing 18 four-room maisonettes, and a 9-storey block containing 32 three-room cross-over maisonettes and 2 five-room flats. Four garages and a children's playground and shelter are provided. The site is 1¼ acres, developed at 149 persons per acre.

The 9-storey block is 39 ft. wide and has framed crosswalls at 11 ft. centres. Access to the lower floors of the maisonettes is by enclosed corridors which run from the vertical circulation bay in the middle of the block to either end. Each corridor is 45 ft. long, 4 ft. 6 in. wide, and lit from both ends. Each corridor serves four maisonettes, two on either side. The lower floor of each maisonette, containing entrance hall, kitchen and living room, occupies two bays width between the central corridor and the outside of the block. The upper floor of each maisonette occupies one bay width across the whole block. Internal bathrooms and wc's are sited in the centre of the block above the corridor. Mechanical extract ventilation is by a vertical duct to each group of maisonettes, with 'shunt' branches to each wc and bathroom.

The 4-storey block is a straightforward design of maisonettes planned within cross walls.

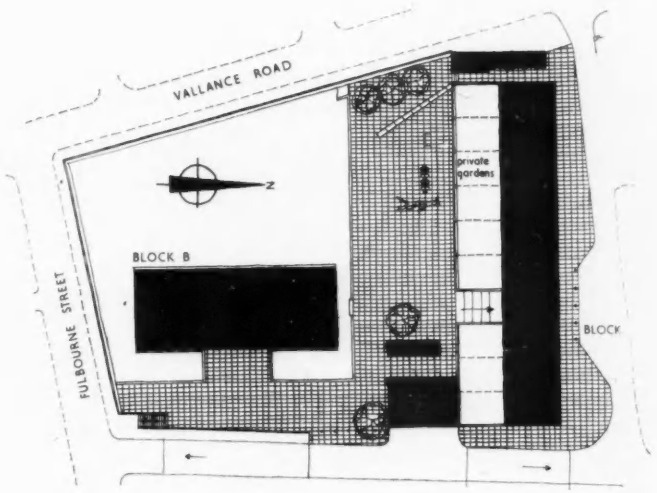
Total number of dwellings: 52; commencing date: June, 1958; completion date: November, 1959.

	£
Amount of tender	167,890
Estimated final cost	165,600
Including the following items:	
1. Tenants' stores	1,209
2. Garages	844
3. Supply of lifts	4,550
4. Installation of lifts	1,363
5. Transformer chamber	600
6. Playground (ex. equipment) ...	456
7. Central heating and hot water installation:	
(a) Engineer's work ...	10,409
(b) Builders' work	3,404

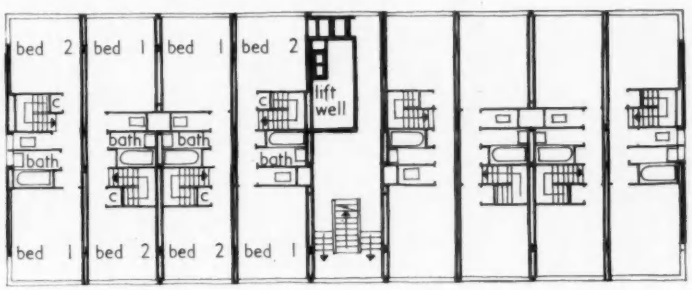
Associate architect in charge: Ralph Smorczewski; heating consultant: John Porges; electrical consultant: Chief Engineer, LCC; quantity surveyors: Harry Trinick & Partners.

sub-contractors & suppliers:

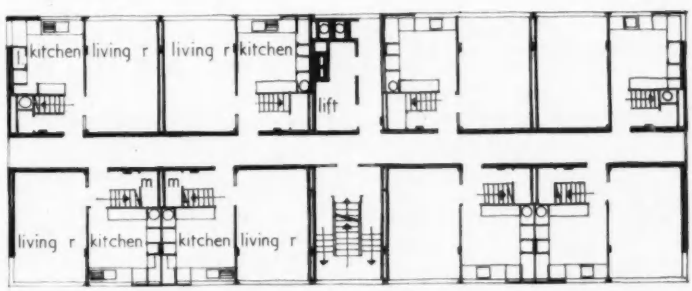
Piling: Soil Mechanics Ltd.; *electrical installation:* Electric Contracts (London) Ltd.; *heating and hot water installation:* J. Jeffreys & Co. Ltd.; *lift installation:* Bennie Lifts Ltd.; *plumbing:* Home Counties Plumbing Ltd.; *bricks:* Eastwoods Ltd.; *lightning conductor:* R. C. Cutting & Co. Ltd.; *metal windows, doors and screens:* John Thompson Beacon Windows Ltd.; *railing and balustrading:* Builders' Iron & Zincwork Ltd.; *joinery:* Humphreys Ltd.; *garage doors:* Westland Engineering Co.; *name plates (external):* The Lettering Centre; *(internal):* The Caxton Name Plate Manufacturing Co. Ltd.; *tarmacadam to roads:* Wainwright Paving & Contracting Co. Ltd.; *children's swing:* H. Hunt & Son Ltd.; *park seats:* L.M. Furniture Ltd.; *Accotile floor:* Armstrong Cork Co. Ltd.; *sanitary ware & ironmongery:* London County Council Bulk Supply.



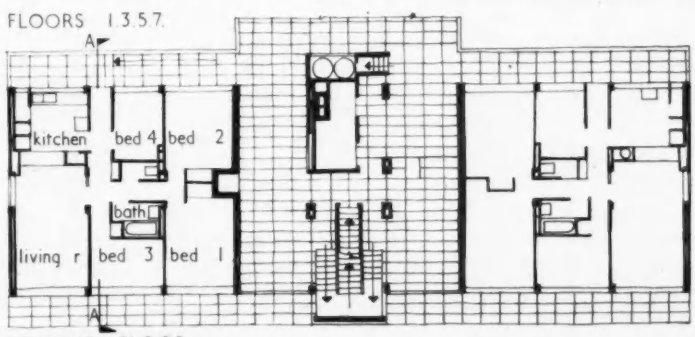
FLOOR PLANS OF 9-STOREY BLOCK (B) Scale: 1 in. = 24 ft.



FLOORS 2.4.6.8.



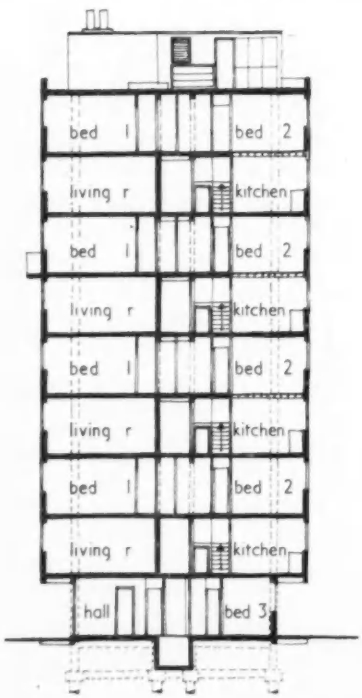
FLOORS 1.3.5.7.

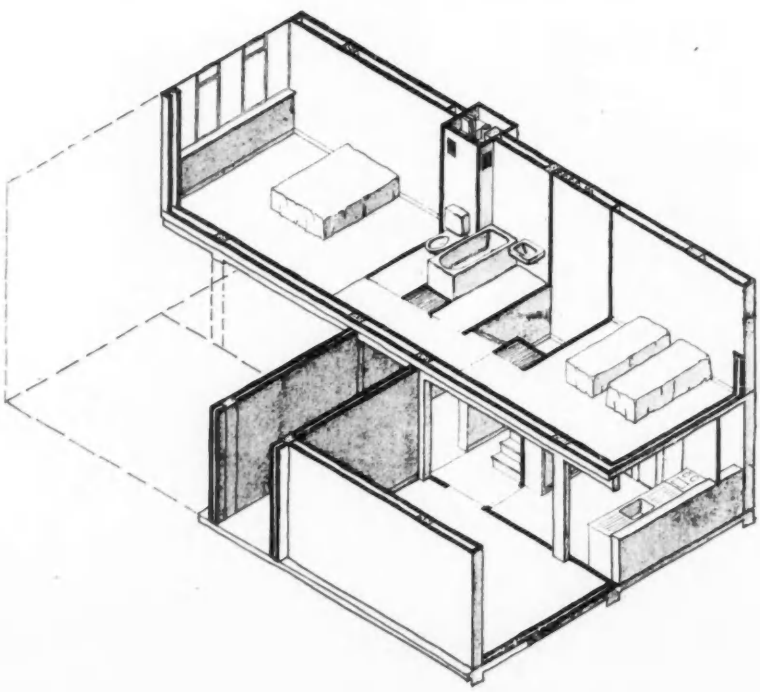


GROUND FLOOR

above, the 4-storey block. Spandrel walls on both blocks have 1½ in. wood wool backing panels and western red cedar board facing. Below, diagram of 'cross-over' maisonettes, and of the cross section. Scale: 1 in. = 24 ft.

Fulbourne LCC Estate, Stepney

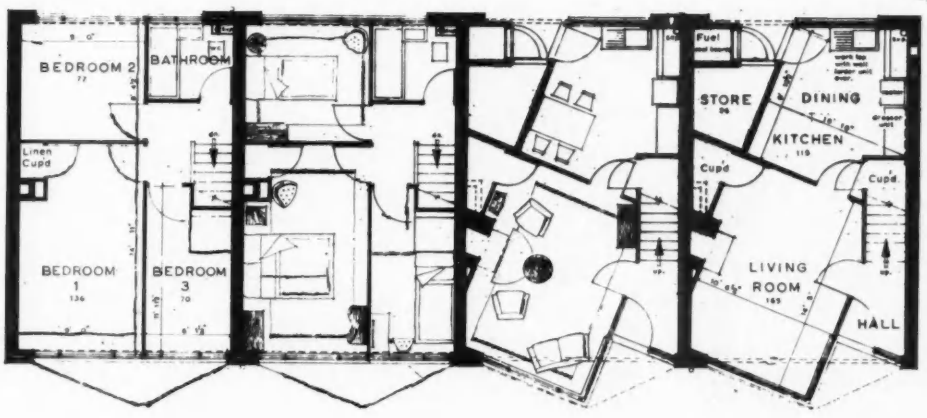




Prototype Low Cost Housing

J. E. S. GLOVER, ARIBA, chief architect

GREGORY HOUSING LTD., general contractors



Above, main frontage of four terraced Angle houses. Construction is cross-wall, with panel wall infilling to front and rear. Right, ground and first floor plans, scale: 1 in = 12 ft.

THE 'ANGLE' HOUSE is a three-bedroom four-person dwelling developed by Gregory Housing specifically for local authority housing schemes, and the first group has been erected in West Sussex for Southwick UDC.

The main feature of the design is that the rooms at ground floor have been turned through an angle of about 22 deg. This results in a bay window which is an integral part of the living room, adds to the width of the hall, and at the same time provides a canopy over the entrance which is a logical continuation of the roof of the angled bay. Another feature is the under-cover rear entrance, store and fuel store. This angling of the rooms, it is felt, also produces a more convenient arrangement of the kitchen dining-space than is usual, and an additional cupboard is provided in the living room.

Construction is brick cross-wall, with panel wall infilling at front and rear. Alternative treatment of the front and rear walls include: vertical hung tiles, cedar boarding, ship-lap boarding, or Tyrolean render.

Newspaper Branch Office, Wellington, Salop

H. MARCUS BROWN & LEWIS, architects
HENRY VALE & SONS, quantity surveyors
REG. LEWIS (WELLINGTON) LTD., general contractors

left, office frontage and forecourt to garages. Below, ground and first floor plans, scale: 1 in.=32 ft.

public area and reception desk

THE BRANCH OFFICE is for the Express & Star, at Tan Bank, Wellington. The building is two-storey, and accommodates at ground floor a reception office with display window, manager's office, teleprinter room, and publishing and printing department. The first floor contains editorial and advertising offices, staff room and lavatories. Garages are provided at the rear of the premises.

The structure is of load-bearing brick finished externally with buff facings. The front elevation is formed with aluminium curtain walling with Muroglass panels.

sub-contractors & suppliers:

Shopfront and interior fittings: Harris & Sheldon Ltd.; *neon signs:* Franco Signs Ltd.; *window walling and steel casements:* James Gibbons Ltd.; *electrical installation:* Bevan Electric Co.; *heating installation:* Defford Heating & Pipework Ltd.; *sanitary fittings and domelights:* W. B. Tatlow & Sons Ltd.; *flooring:* Charles Hunter Ltd.; *ironmongery:* F. P. Waltho Ltd.; *plastering:* A. D. Edwards; *painting:* W. G. Overton.

News of the Week

Technical Staff Shortage, Newport

URGENT PROJECTS are being held up in Newport, Mon., by an acute shortage of technical staff in the council's architect's department. The shortage has put the department's work six months behind schedule. There are 17 vacancies in the department for qualified men, and the council are trying to attract men to fill these positions by offering special benefits and concessions; meanwhile the council are engaging the help of private firms.

Council House Design Criticised

THE DESIGN of council houses in Pontypool (Mon.) estates were criticised at a meeting of the council, when they were described as years behind those in neighbouring areas. The council architect, Major W. H. C. Dawkes, LRIBA, said that nine different designs were scheduled for an area where 334 houses were to be built. However, when these designs were shown to the meeting, some councillors still complained of the lack of imagination in the designs, and it was decided to hold a special meeting to consider the design of the houses.

It was also decided to give preliminary approval for private development of an area in New Inn for 292 houses and flats. The estate is intended to be a show-piece.

AA Entrance Scholarships

ENTRANCE SCHOLARSHIPS offered by the Architectural Association School of Architecture for 1961 include a Leverhulme Scholarship (to the value of £2,500 over five years), value £112 10s. per year, and various others down to an annual value of £50. There are six scholarships available to entrants for the first year and one senior entrance scholarship for students who have passed the intermediate examination. Further particulars and forms of application may be obtained from the principal of the school, at 34-36 Bedford-square, London, WC1.

Sports Pavilion for Crawley

TERMS have been agreed for the lease of a site at Crawley, Sussex, for the erection of a £400,000 'sportsdrome,' designed by Mr. Robert Grinling, ARIBA, of Halkin-street, London, W. Mr. Nicolas van Slochem, chairman of Van-Taylor Productions Ltd., proprietors of the Brighton Palladium, is backing the project. The lease, which is for 99 years, is for a site in the High-street and the project will include an ice rink, a dance hall, 16 bowling alleys, and a public house. If planning approval is given, it is proposed to commence building operations in the spring.

New Council Offices at Egham

AN APPLICATION by Egham Urban Council to build new council offices in High-street, Egham, has been approved by Surrey town and country planning committee. The offices will comprise 22,000 sq. ft. of office accommodation in a two-storey block 200 ft. by 36 ft. and 22 ft. high. They will include a council chamber, committee room and dining hall as well as a caretaker's lodge. The building is to be erected on about 2½ acres of land with a frontage of 100 ft. to High-street and a maximum depth of 500 ft., and there will be a parking space for 70 cars. The architect is Mr. Denis Clarke Hall, FRIBA.

A Hospital 'Digest'

THE FIRST ISSUE of a monthly journal surveying world literature relating to hospitals was published on January 2, under the title 'Hospital Abstracts' (HMSO, price 5s.).

This new series is based on the many periodicals, books reports and other material published in various countries on matters relating to hospitals and hospital services (excluding strictly medical and related professional matters) which are now available in the Ministry of Health library. Each issue will contain about 150 summaries or notices, in English, of periodical articles, books, and other publications from all parts of the world.

It is the hope of the Minister of Health that the new monthly will prove to be of considerable value to hospital authorities and staffs by keeping them up to date with hospital affairs at home and abroad.

Inaugural Rankine Lecture

AN ANNUAL RANKINE LECTURE, named in memory of William John MacQuorn Rankine (1820-1872), is to be inaugurated on January 25 when Professor Arthur Casagrande, of Harvard University, will speak on 'Analysis and Control of Seepage for Dams' at the Institution of Civil Engineers, Great George-street, London, SW1. The lectures will be sponsored by the British National Society of Soil Mechanics and Foundation Engineering.

Building Centre Vacant Post

AFTER nearly ten years as staff architect at the Building Centre, London, Mrs. Jean Conder, ARIBA, is giving up her position at the end of March. Applications are now invited by the Building Centre for a successor; duties include supervision of the Centre's large permanent exhibition and other exhibition work. Applicants must be members of the RIBA. Details advertised in this issue.

Corby Vacant Post

CORBY DEVELOPMENT CORPORATION invite applications for the post of deputy chief architect. Salary is £1,715 to £1,975. Applications to General Manager of Corporation, Corby, Northants, by January 20. Details advertised elsewhere.

Retirements

MR. ERIC G. FELGATE, ARIBA, Borough architect of Keighley, is to retire after 36 years' service with the council.

MR. T. BRYN RICHARD, MISTRUCTE, MINSTRA, architect to Llwchwr Urban District Council, has retired after 37 years' service with the council.

Coming Events

FRIDAY, JANUARY 6

ROYAL SOCIETY OF PAINTERS IN WATER COLOURS.—Exhibition of Flower Paintings. 26 Conduit-st., W1 (open till Jan. 26; Mon.-Fri., 10-5; Sats. 10-1).

ARTS COUNCIL.—Exhibition: 'Landscape for Living.' 4 St. James's-sq., SW1 (until Feb. 4).

MONDAY, JANUARY 9

SOUTH EASTERN SOCIETY OF ARCHITECTS.—Exhibition of photographs, drawings and models of the work of local architects sponsored by the Kingston-upon-Thames district chapter to be opened by Sir Hugh Casson. Bentalls, Kingston, 12 noon (until Jan. 14).

TOWN & COUNTRY PLANNING ASSOCIATION.—Discussion on Bow Group pamphlet: 'Let our Cities Live.' Planning Centre, 28 King-st., Covent Garden, WC2. 6.30 p.m.

REINFORCED CONCRETE ASSOCIATION (NORTH WESTERN BRANCH).—'The Selection of Plant and its Consequences in Reinforced Concrete Construction,' by D. Bishop. College of Technology, Sackville-st., Manchester. 6.45 p.m. (to be repeated at Liverpool on Jan. 10).

TUESDAY, JANUARY 10

RIBA.—Announcement of award of prizes and studentships, followed by talk on 'Modern Architecture and the Historian,' by Prof. N. Pevsner. 66 Portland-pl., W1. 6 p.m.

LONDON BUILDERS' FOREMEN'S ASSOCIATION.—Lecture: 'Shoring and Under Pinning,' by J. W. Tiller. Caxton Hall, Westminster, SW1. 6.30 p.m.

WEDNESDAY, JANUARY 11

COMBUSTION ENGINEERING ASSOCIATION (SCOTLAND).—One-day meeting. Royal British Hotel, Princes-st., Edinburgh. 10 a.m.

ARCHITECTURAL ASSOCIATION. — Technical talk: 'Co-ordination on the Building Site,' by H. F. Pardy and W. J. Nicholls. 34-36 Bedford-sq., WC1. 6.15 p.m.

EASTERN FEDERATION OF BUILDING TRADES EMPLOYERS.—Annual meeting. Garden House Hotel, Cambridge.

INSTITUTE OF BUILDERS DISCUSSION CLUB (BRIGHTON & DISTRICT CENTRE).—'Practical Formwork, Design and Construction,' by J. G. Richardson. South Eastern Gas Bd.'s Showrooms, Church-st., Brighton. 7.30 p.m.

THURSDAY, JANUARY 12

INSTITUTION OF STRUCTURAL ENGINEERS.—'The Structural Use of Aerated Concrete,' by A. Short and W. Kinniburgh. 11 Upper Belgrave-st., SW1. 6 p.m.

BUILDING CENTRE.—Discussion by engineering group of Society of Industrial Artists. Store-st., WC1. 6.30 p.m.

ARCHITECTS' CHRISTIAN UNION.—Reception. Speaker will be Prebendary C. C. Kerr. RIBA, 66 Portland-pl., W1. 7 p.m.

FRIDAY, JANUARY 13

BIRMINGHAM & FIVE COUNTIES ARCHITECTURAL ASSOCIATION.—'Hospitals,' by D. A. Goldfinch and L. Hare. Birmingham Medical Institute, 36 Harborne-rd., Edgbaston 15. 6.15 p.m.

SATURDAY, JANUARY 14

NORTH WESTERN EDUCATIONAL ASSOCIATION FOR THE BUILDING INDUSTRY.—'Some Problems Concerned in the Administration of Further Education in Lancashire,' by A. N. Fairbairn. Harris College, Corporation-st., Preston. 10 a.m.

Professional Announcement

The partnership between MR. F. B. BRYDEN, FRICS, and MR. I. M. THOMSON, ARICS, has now been dissolved by mutual consent. Mr. Bryden has taken into partnership as from January 1, MR. S. W. HOOPER, ARICS, and will continue to practise under the name of F. B. BRYDEN & PARTNERS, chartered quantity surveyors at 33 Catherine-place, Westminster, SW1, and 50 High-street, Cowbridge, Glamorgan. Mr. Thomson has entered into partnership with MR. C. J. BACON, ARICS, and is now practising under the name of BACON, THOMSON & PARTNERS, chartered quantity surveyors, at St. Andrew's House, Jameson-avenue, Salisbury, Southern Rhodesia.

Competition News

Piccadilly Circus Replanning

THE ORGANISERS of 'The Evening News and Star' Piccadilly Circus architectural contest now announce the address to which entries are to be sent. It is: Piccadilly Circus Architectural Contest, 'The Evening News and Star,' 19/22 Bouverie-street, London, EC4. Entries must be received by 7 p.m. on Monday, January 16. As the office will not be open for receipt of entries until Friday, January 13, entries should not be dispatched before that date.

The prize winning entries and as many others as can be accommodated will be on view at the Building Centre, Store-street, WC2, from 2 p.m. on Friday, February 26, then daily until Friday, March 11.

Zona Residencial Elvira

THE WINNING DESIGNS in the international competition for a residential zone at Elvira in Spain were announced by the assessors on November 17. The first premium of 250,000 pesetas and 30 days on the Costa del Sol Espagnole was awarded to project number 256 by M. Yves Vitart, of Paris; Brian Colquhoun and Partners, of London; and C.O.F.E.R., of Paris, aided by M. Paul Retter, of Luxembourg; M. Lucien G. Armanet, of Paris; and M. Raymond Chavanne and Paul Verny. The second premium of 100,000 pesetas and fourteen days on the Costa del Sol Espagnole was awarded to project 225 whose authors were a group of Spanish architects.

Competitions Open

* *The date in italics refers to the issue of* The Builder *in which fuller details appeared.*

HOSPITAL AT BOSTON, LINCS.—Two-stage competition open to architects resident in the UK and Eire for a general hospital comprising 474 beds and all ancillary departments. Assessor: Mr. John Murray Easton, FRIBA. Premiums: £500 to each of six architects selected from first stage to take part in final. £1,500 additionally to winner. Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-rd., Sheffield, 10, to whom second stage designs by January 31. *March 18.*

HOUSING AT HARLOW NEW TOWN.—Competition arranged by the Harlow Development Corporation open to architects on ARCUK register for 270 houses and flats proposed on a site in Passmore's Neighbourhood in the New Town. Assessors are Mr. H. T. Cadbury-Brown, FRIBA, and Mr. Victor Hammett, ARIBA. Premiums of £1,000, £750 and £500 are offered. Conditions, site plans, etc., on deposit of £2 2s. from the General Manager, Harlow Development Corporation, Terlings, Harlow, Essex. Last day for submission of designs, March 6, 1961. *July 8.*

NEW LIBRARY BUILDING, TRINITY COLLEGE, DUBLIN.—International competition open to all architects authorised to practise in their own country, and who are members of a recognised institute or society, for a new library building at Trinity College in the University of Dublin. The jury of award comprises: the Rt. Hon. the Earl of Rosse, Sr. Franco Albini, of Italy, Sir Hugh Casson, MA, FRIBA, Mr. Raymond McGrath, of Dublin, and Mr. K. DeWitt Metcalf of Harvard University. Premiums: £1,500, £1,000 and £750. Entries by 5 p.m. on March 21, 1961. Conditions on deposit of £5 from the Competition Registrar, Trinity College, Dublin. *June 24.*

COUNTY OFFICES, ROXBURGH.—Competition sponsored by the Roxburgh County Council and open to registered architects practising and resident in Scotland, for new County Offices at Newtown St. Boswells at estimated cost of £225,000. Assessor is Mr. W. H. Kininmonth, RSA, FRIBA, FRIAS; premiums are 500, 300 and 200 guineas; last date for submission of designs is March 31, 1961; and the final date for receipt of questions is October 31. Conditions and General Instructions from the County Clerk, County Offices, Newtown St. Boswells, Roxburgh, on deposit of £2 2s. *September 23.*

RAILWAY PASSENGER BUILDING, TUNIS.—Competition sponsored by the Société Nationale des Chemins de Fer Tunisiens for a passenger building to be erected at Tunis Ville station. First prize will be the definite execution of the plan; other prizes will be: 2nd, 1,000 Dinars; 3rd, 750 Dinars; and 4th, 500 Dinars (1 Dinar 17s. 6d.). Closing date for designs is May 1. President of the jury will be M. le President Directeur-General de la SNCFT, 66 Rue du Portugal, Tunis, to whom interested architects should apply enclosing testimonials. A file on the project may be inspected at the Tunisian Embassy, 29 Princes-gate, London, SW7. *November 25.*

CIVIC CENTRE, LINCOLN.—Competition sponsored by the Lincoln City Council and open to registered architects for a civic centre to be built at Lincoln at a cost not to exceed £975,000, excluding site clearance and professional fees, but inclusive of outside works. Assessors: Geoffrey Jellicoe, CBE, FRIBA, Sir Leslie Martin, FRIBA, and Mr. J. M. Richards, ARIBA; premiums are £4,000 £2,000 and £1,000; last date for submission of designs is July 7; and the final date for the receipt of questions is January 31. Conditions on deposit of 2 gns. from the Town Clerk, Town Clerk's Office, Saltergate, Lincoln. *December 30.*

WESTMINSTER HOUSING SCHEME.—Competition sponsored by the City of Westminster and open to registered architects for the lay-out of an area in Westminster of about 12 acres and for the design of flats and other buildings to be erected thereon. The assessor is Mr. Philip Powell, OBE, FRIBA; premiums are 1,500 gns. for the author of the design placed first, and a further 1,500 gns. to be allotted by the assessor among the authors of from two to five designs placed next in order of merit. Last date for submission of designs is July 10, and for the receipt of questions, February 3. Conditions on receipt of deposit of 3 gns. from the Town Clerk, Westminster City Hall, Charing Cross-road, London, WC2. *December 30.*

The New Year Honours

Awards to Members of the Building Industry

FOLLOWING is our list of architects, surveyors, builders and others associated with the industry who received recognition in the New Year Honours:

GBE

SIR ELLIS HUNTER, chm. and man. director, Dorman Long & Co. Ltd.

KNIGHTHOODS

COL. R. P. W. ADEANE, OBE, for services to the Tate Gallery; CECIL DANNATT, OBE, vice-chairman, Associated Electrical Industries Ltd.; G. E. BEHARRELL, chairman, Dunlop Rubber Co. Ltd.

CB

H. F. OXBURY, assistant director-general, British Council.

CBE

PROF. ROBERT BROWNING, chmn., East Kilbride Development Corporation; G. A. JELLICOE, FRIBA, MTPI, FPILA, landscape architect; A. G. JURY, FRIBA, chief architect and dir. of planning, Glasgow; R. A. PENROSE, chmn., Institute of Contemporary Arts; A. R. PLOWMAN, dir. of contracts, MoW; J. B. SCOTT, DFC, sales dir., Crompton Parkinson Ltd.; G. E. WATTS, principal, Brighton Technical College; A. J. YOUNG, man. dir., English Electric Valve Co., Chelmsford.

OBE

R. L. ARMSTRONG, dir. of pub. wrks., Sierra Leone; S. F. CHAMBERS, asst. dir. of contracts, War Office; S. J. DOCKING, prin. insptr., MoHLG; A. B. AGARD EVANS, librarian, grade 1, MoW; N. S. FARROW, MBE, man. dir. Howard Farrow Ltd.; E. LE BLOND HENDERSON, FRIBA, for services to architecture in W. Australia; G. D. IRELAND, chief eng., Windscale and Calder Works, UK Atomic Energy Authority; R. A. P. LEACH, dir. of pub. wrks., S. Cameroons; LORD MOTTISTONE, FRIBA, for services in the construction of Chapel of the Order of the British Empire, St. Paul's Cathedral; J. F. SMITHIE, engineer and surveyor, Bletchley UDC; WILLIAM WILSON, artist in stained glass.

MBE

P. A. BARNES, sec., Lancs. branch, CPRE; EDWIN CARR, sen. svyr., MoW; DAVID CRAWFORD, JP, sec., Birmingham and Dist., ASW; J. C. GALE, dir. and sales man., Petters Ltd., Staines; C. J. GAYTON, higher extve. offr., War Damage Commission; N. C. GILLIES, asst. dir. of pub. wrks., former Somaliland Protectorate; G. GWYNNE, sen. supt. of wrks. (civil), Sierra Leone; W. H. HOMER, dist. svyr., MoW; G. H. W. LEWIS, sen. extve. offr., MoHLG; G. B. MASON, staff photographer, National Buildings Record; H. H. POWELL, FRIBA, architect, E. Region, Brit. Rlwys.; K. A. R. PURDOM, ARIBA, snr. architect Works and Surveys, Federation of Nigeria; E. H. RAMAGE, dir., Sir Robert McAlpine and Sons (S. Wales) Ltd.; J. M. SCOTT, extve. rep., Northern Ireland Plumbing Trades Union; S. G. SHILSON, higher extve offr., MoW.

BEM

R. J. MIDDLETON, carpenter, tech. group, War Office.

A Hundred Years Ago

From The Builder of January 5, 1861

THE TEMPLE FOUNTAIN.—Sir: the only purely Italian design of a fountain to be seen in England, which is not offensive in taste, is that of white marble in the Temple Gardens, which, instead of being made the most of, as it well deserves to be, and having proper accessories, is covered up in great monster trees, and overflows its marble border, instead of having an open space around it, with four vases or statues on the paths which should lead from it. I feel sure, did the benchers think of it, something would be done to open out one of those of which we have so very few, and even they so impure in taste.—SOMERSET.

1961

SW7.

spon-
open
tre to
xceed
pro-
works.
RIBA,
J. M.
£4,000
ission
te for
Con-
Town
, Lin-

npeti-
inster
e lay-
about
other
sessor
niums
design
to be
uthors
ext in
ion of
ipt of
eceipt
Clerk,
-road,

ILLIAM

CPRE;
CRAW-
ASW;
Ltd.,
, War
t. dir.
tecto-
(civil),
MoW;
HLG;
tional
archi-
RDOM,
rveys,
r., Sir
Ltd.;
reland
ILSON,

group,

o

1861

only
to be
ive in
the
being
es to
es, is
, and
ad of
with
which
d the
uld be
which
ey so

Architectural Misconceptions of Engineering

Distinction Between Design and Analysis

That engineering was clearly an art and not a science was argued as one of the less glaring misconceptions of his profession upon which Mr. A. J. Harris, BSc, MICE, MConsE, based his lecture, given at the second general meeting of the 1960-61 session of the Royal Institute of British Architects at 66 Portland-place, London, W1, on December 13. Sir William Holford, MA, PRIBA, PPTPI, FILA, was in the chair. Extracts from Mr. Harris's address and the subsequent discussion are given below.

THE FOUNDATION of engineering is knowledge of materials not, as engineers are so often apt to preach, a knowledge of mathematics. I maintain that the basis of engineering is knowledge of the materials being used; knowledge of what they are made, how they are made, how they are shaped, how you fit them together, how they stand up to stress, how they break, how they catch fire, how they react to all the various agencies of ruin which are perpetually nibbling at them, how in due course all fall down.

Mathematics enable one to determine the characteristics of a material in a remarkably short space of time. This century a very large number of new structural materials have arisen. The existence of glue has revolutionised the use of timber. Before that we had prestressed concrete and aluminium. Before those, reinforced concrete, and mild steel. All these materials in their various forms represent a complete revolution in the art of building and their characteristics, which in the old days would have taken centuries to understand, have been determined at an ever-increasing speed. For instance, we know a great deal about prestressed concrete and this took about fifteen years. It took us about sixty years to get reinforced concrete to the same stage of development, and possibly a little longer in the case of steel.

We have the relation between design and materials, the relation between design and the mathematical analysis of the structure when designed, and finally we have the relation between design and scientific knowledge. The initial action of the engineer—I hesitate to use the word 'creation' because it sounds ponderous—is that of invention, design if you like; the action of decision to discover the shape of a structure. This is beginning to lead us into a further misconception, the business of structural economy. It is impossible to dream up a shape of structure without having some idea of the characteristics and material of which it is made.

Structural Economy

Structural economy has no existence except in terms of a certain structural material. Let me give an instance. One of the most banal of structural materials is, I suppose, mild steel. You buy a little handbook bound in red leather that tells you a great deal about standard forms which mild steel takes. You take your book, open it at the right page and run your finger down the column, and there you have it. This, you may say to yourself, is steel engineering. So it is, but it is steel made in a certain way. It has been rolled hot. If your material is steel which has been cast, the shape of your structure, all your conceptions of structural form, will inevitably be radically altered. I say this because I have detected on occasion among those with whom it has been my pleasure to work a sort of idea about structural economy to the effect that there is the structure and there is inherent economy in structural form to which we must attend. True, but there is no such thing as structural form divorced from something of which it is made.

In terms of your material you conceive your structure. Having designed your structure you then have recourse to one technique or another to see if it is going to stand up or not. One of the ways of doing this is to analyse the stresses mathematically. There are many other ways. One is to build a structure and see if it falls down. Another is to make a model and test that and see how that goes. This is a technique which is increasingly used and is of greater and greater importance as the various scale factors and the instrumentation become more highly developed. But you still have to know, as you do when you are seeking to estimate the mathematical analysis of a structure, what questions you want to ask.

It is no use loading the thing up with instruments and reading them, if you do not know what you are trying to find out. But there are many ways, having designed your structure in terms of your material, and the means which you are going to use to get your material into this shape in position, by which you can then ascertain that your structure will be adequate.

Engineering Forms

It is interesting to note that the engineers who are known to architects—I am almost tempted to qualify this by reducing the phrase to the engineers who are known; at any rate civil engineers who are known—are those who have presented architects with new forms. Let us look back over this century. Who were they? Maillart. He built a few bridges in Switzerland, exquisite bridges. Freyssinet was an interesting case. He is known to architects as the man who invented some new and peculiar forms of shell roof, and one or two novel forms of bridge. He also invented a new material, but in respect of this I get the impression that he is regarded as a sort of ironmongery merchant. The Freyssinet who is known is the man of pre-1930. They heard of the new material later, which really is of far greater significance in the structural form. Since Freyssinet we have had Nervi and Candela and many others.

Passing to the question of the employment of engineering forms, nine times out of ten these are produced with a particular purpose in view, invariably with a given material in view. They then become famous. Shell roofs, barrel vaults, and so on, are used by architects quite widely. One has to be grateful for the rapidity with which the new shape becomes a matter almost of fashion. This leads insensibly to the emergence of what one might call an engineering style—it has done so this past twenty years—in which the engineering forms thought up with a particular material for a particular employment are commonly used for their own sake.

Am I alone in having seen scattered around this town shell roofs which consist of expanded metal plastered over and hung from steel trusses? There are many instances of this kind where the form has been taken and, for its own sake, then built in some completely different material merely because it has become rather chic.

There is, finally, the relation between the engineering design and scientific knowledge in general. Here perhaps I can deal with what I think is another misconception, namely, that the scientific solution is a cramping and unique solution: that as soon as you start dealing with a scientific analysis of your problem and of your structure you are immediately bound by the precise knowledge which you obtain. Now here I think we are dealing with one of the basic beliefs of the engineers.

This unique scientific solution is conceivable; you can conceive of knowing so much about the function for which your structure is intended, and knowing so much about the material of which it is made—of all the forces, the agencies of ruin to which your material and your structure is submitted—that you can have a series of optimum solutions. From these optimum solutions it is possible to choose one which can be produced with the minimum expenditure of human labour. This solution would, of course, be unique and necessary. It is the basic, if unavowed, belief of the engineer that if ever he got this solution it would be a solution of superhuman, if not angelic, beauty.

This is the motive which underlies the common exercise of the design process on the part of the engineer. In point of fact, we are very, very far from it. We know very little indeed about what our structures are being used for. The degree of confidence which we have in our stresses and our loads is well indicated by the factor of safety, which may vary between two and five, according to the confidence we have either in the manufacture of our materials, or in the skill with which they are put together, or in the certainty with which we have analysed our forces, or in the certainty

with which we know the loads imposed upon them. So that whilst it is true that a unique solution is indeed conceivable, in fact we are a very long way away from it, and the greater the degree of precise knowledge we can obtain concerning our structures, the better those structures will inevitably be.

There is one final misconception which I would like to deal with here: I think I have given the impression—the true impression—that the engineer starts off by drawing. All the etymological origins of the word 'design' are related to drawing, and the earlier the stage in the design process the softer the pencil and the farther you are away from the 6H sharpened to a chisel point. If, then, the engineer starts off with a piece of charcoal and thinks that the process of mathematical analysis can in certain circumstances be dispensed with, and that then somehow the whole thing becomes so much easier, then he is falling for a misconception which can well be paralleled by the misconception of the young fellow anxious to entertain at Christmas who, dismayed with the impedimenta and mechanics of illusion, decides that sleight of hand is the thing for him. In point of fact, so far from being easier if you are able to dispense with mathematics, it is very much more difficult. Whilst it is true that the creators of new forms and structural shapes did not wait for analysis, for precise and rigorous analysis, nevertheless they paid for the lack by grossly exaggerated factors of safety, for if you do not know what you are doing you are bound to play safe. If you do not play safe, sooner or later the structure will fall down.

It is a misconception that the intention of producing the object of pleasure and success in attaining that object are necessarily linked in any way, and if it be true that engineering is an art employing science in the construction of objects of utility, commonly severely cramped by considerations of cost, by ease of construction—even, in many cases, by the mere possibility of construction—one finds here a curious parallel between engineering and the conditions which govern the production of what are referred to these days as folk arts. I am thinking of the tools, the implements, the carts, the boats, the things which were produced by almost the peasantry of past years, when a mistake in calculation leading to a collapse of your object meant ruin, and an over-estimate of the amount of material required meant that you did not eat for so many days running.

Twentieth-Century Folk Art

There is a great deal in common between the products of these arts with what we might call the folk art of the twentieth century, equally anonymous, almost equally communal. Although it is true that an engineer signs his name to a conception, to a structural form, this structural form is nevertheless carried out by a vast body of men and relies upon a vast field of invention and achievement elsewhere.

If my statement is true, that the absence of the intention to delight necessarily implies the absence of the delight is a misconception, it is also true that the score is about even between those who over this last century and a half have been doing their best to produce works of art and those who have been doing their best to produce works of utility—if you like, the architects and the engineers; between those who have defaced and those who have enhanced the face of the land. Both have their monstrosities, both have their successes. The curious thing about works of engineering is that you usually have to wait fifty years. I look forward to fifty years ahead and I have no doubt that some preservation society will be agitating for the maintenance of those fine old mid-century motorways.

Finally, I think the true distinction is not between the engineer and the architect but between design and analysis. I suppose, to be symmetrical, one would call them synthesis and antithesis. The antithesis is that function which breaks things up into their parts, so that you can obtain detailed and precise knowledge. The synthesis is that which puts things together, imposes your form upon your matter, and a sort of design, a sort of creation. I think that this distinction is one which cuts right through both of our professions. We both have our analysers, we both have those who put things together, those who design, who create and build. Indeed I am tempted to wonder whether the difference between the engineer and the architect is not primarily institutional.

Discussion

MR. W. G. HOWELL, ARIBA: I was struck by what Mr. Harris said about the relationship in his field between concept and analysis. As architects it is a thing we are all embarrassed about, because we feel that we are trying to be up to date and scientific and are embarrassed that we are going to be labelled as formalists if we admit that we had to think of some concept at the beginning of the job to which we could relate our analysis.

I think we are always aware that the choice with which we are faced, over which we cannot be helped by science or by art, is that of concept or analysis. Decisions may be taken for trivial or dishonest reasons, but all our job of designing is, in fact, a battle between the concept and the analysis. When one starts on a job one cannot feed the facts in at one end, turn a handle and expect Parthenons to come out at the other end. One has to have a concept of the building one is going to put together.

MR. R. S. JENKINS, AMICE: One of the things Mr. Harris said might lead to another misconception. He described how for an engineer in the first place there must be a shape, with the analysis or the model testing coming later. Of course anyone can do that, and a lot of architects have done it and do it. In the case of shells, this can lead to rather bad shapes from a structural point of view, although they may be aesthetically pleasing to some people.

I believe that engineers are somewhat responsible for architects and others thinking that they can make things of rather fantastic shapes. Simply because some engineers are engaged on a generalised analysis for a shell of any shape, it does not mean that all shapes of shells are structurally sensible and economically built. I think that an engineer, in dreaming up a shape, is using as the back of his mind a thing called intuition, but this is really based on experience, his previous analysis of other shapes, which gives him a large feeling for what forces are present and the sort of thing described as stress load and how it will act.

The Understanding of Structure

MR. W. A. ALLEN, ARIBA: May I ask Mr. Harris if it is a valid conception or an invalid misconception that knowledge of mathematics is really essential to the understanding of structure? He was not absolutely clear. He was rather broadly hinting at his answer to this question but was not explicit. As you know it is becoming rather a point of interest in the education of architects, and I think that quite a number would be interested to know the views of engineers about this. Is it merely an aid to quantifying the forces to get a grasp of the order of events or is it actually essential to the understanding of structural ideas?

PROF. R. MATTHEW, FRIBA: Is it not true that engineering education of the last 25 years has got very much more mathematical than it was: that the time spent in an engineer's curriculum today on, first, design and, secondly, learning about the nature of material—which is the basis, and rightly so—has also got very much less than it was a quarter of a century ago?

PROFESSOR ROSS (King's College): Perhaps I ought to say, as somebody responsible for teaching, that it is true that the tendency has been to reduce the amount of design work and to increase the analysis. We look at these matters repeatedly in order to devise what we think may be the most suitable course.

SIR ALLAN QUARTERMAINE: At this late hour I shall merely say that I came here myself under a misconception. Obviously the title of the paper should have been 'Engineers' Misconceptions of Engineering.'

One thing which has been of interest to me in recent years has been the manner in which architects can produce forms for engineering works and engineers can translate those forms into reality by finding ways and means of designing to that particular form; a form which the engineer himself would not, in the first place, have thought of adopting. In other words, the form, the element of design, has come out of the architect's mind and what I am pleased to term the scientific design has come out of the engineer's mind.

This brings me to the point that the word 'design' as used by architects and engineers is often one which causes a lot of pain on both sides. Certainly it does this to the engineer when he sees what he thinks is a beautiful engineering structure designed by himself referred to as designed by the architect. That is because the architect has done much towards

creating the form of the structure, whereas the engineer has succeeded in creating the structure of that form in a safe manner. There is only one word we both want to understand clearly. That word is collaboration.

MR. H. W. ROSENTHAL, ARIBA: Ought we not, as architects, to have the duty to press for shapes which we know are right because they are economical?

MR. HARRIS: There have been many searching questions, and if it be true that I came here to provoke you, I have in fact been provoked.

On the question of true economy, I fear that I do not care much for any of the principles of building listed by one speaker. Here again I find that there is too much easy knowledge floating around about structures of this form. I am reminded of some of those fervent little books which tell you how to be the perfect husband. They are full of unexceptionable principles and first-class sentiment. In fact, they contain good, solid stuff, but they are of absolutely no use to anybody whatsoever. Similarly I find myself reading books on the philosophy of structures and I say, 'He's right there' and 'He has scored another point there,' but they are of no use. The only way of getting to the point of designing by eye is by a lot of hard work.

As regards economy of structure, again while I agree with Sutherland that you may be most honest when you are dishonest, I also feel that the architect and engineer are entitled to work, metaphorically speaking, at the edge of the pier and throw their watch and chain into the water—at least they know where it is! They are fully entitled to used a rolled gold girder if they are getting value for their money. The one thing which they are not entitled to do is to walk around with a hole in their pocket through which the client's money is steadily trickling away.

As far as folk art and beauty are concerned, I fear that all one can say is that this particular feeling, this deep, innate conviction that there is the ideal structure in which you have everything worked out right, suiting its function, suiting its material, suiting the conditions of its manufacture—this may be an 'ignis fatuus' but nevertheless it is the sort of inspiration which most engineers, if actually cornered after three hours of interrogation, I think would admit.

More Everyday Things

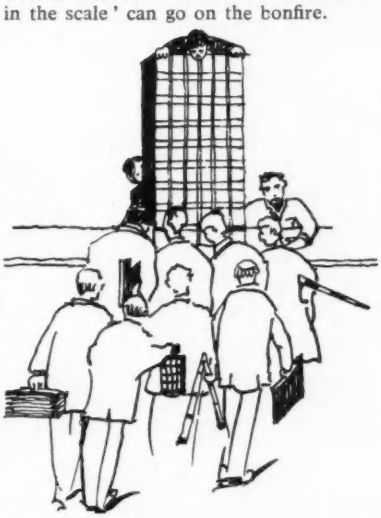
BY ARTHUR W. KENYON, CBE, FRIBA

23. Group Practice

UNLESS WE ARCHITECTS have something better to offer to would-be promoters of building projects than the allurements of the 'package deal' we had better get busy finding our place in the package. In spite of its seductive appeal, the client who decides to plump for this little tried method of contract must understand that it leaves him virtually at the mercy of the all-in contractor, and if things go bad his only recourse is to legal procedures. He has lost his quasi-arbitrator in the private architect who acted as a sort of buffer state between contractor and building owner, as well as guardian of the flank from surrounding forces of quantity surveyors, specialists and consultants.

Now is there not something between these two extremes to offer to our clients? I believe there is. I believe there is a way in which the client can have the advantage of an all-in service, while preserving for himself the protection of professional responsibility which he stands in danger of losing in the contractors' package deal. And it is the architect's job to find this way in collaboration with his colleagues in the associated professions serving the building industry. I mean group practice. Many firms of architects, including my own, are already moving in this direction, but I doubt if any of us have yet been enterprising enough to work out all that this means and to offer an all-in professional service to our clients, quoting an all-in fee.

In theory, all this is perfectly simple. The client, instead of engaging an architect, engages a team of professional men. Every team must have a captain, and I must firmly claim right away that the proper captain of this team is the architect-designer who accepts the ultimate responsibility for total concept and planning. The fee quoted for this all-in service is a fully comprehensive one, inclusive of services of architects, quantity surveyors, engineers, specialist consultants, charges for surveys, printing and going home on the bus. Not an extra penny over this may be charged, and that well-known list of 'Services not included in the scale' can go on the bonfire.



TEAM

Ideally, I would like to think that firms of contractors would form associations with these group practices so that a full exchange of ideas can be made in the early stages of design. This would, of course, mean a negotiated tender. But this need not always be so, for I believe competition to be as sound a discipline for the building trade as it is for architecture where the circumstances are fitting.

The idea of group practice is, of course, not new. Government departments, county councils and commercial organisations have been setting up this kind of service within their own departments for years past. These departments, as we all know, are growing fast both in size and number, and I believe they are doing so because private practice, except in a very few instances, has been unable to compete with them in the comprehensive array of professional talent that they are able to assemble. At the same time, I believe most sincerely that private practitioners could, if they would, offer the same comprehensive service by methods of group practice at comparable cost.

Unfortunately, the cost of carrying out work in this way within a government department must always seem related to the length of a piece of string. Nevertheless, I believe serious attempts have been made to assess these costs in terms of a percentage on the building costs, and these have been quoted at anything from 13 to 15 per cent. The percentage will obviously vary according to the nature of the work, but I believe our clients would be far happier to pay 15 per cent for the total service, knowing from the outset that this was their absolute total commitment for professional services. Add to this a fixed price contract, and we can begin to look our clients squarely in the face and start to obliterate that image of the architect as a man who knows nothing about money.

I began this short series on architectural practice in a spirit of self-examination in my own trade after offering some not universally popular opinions on trades that might be vanishing from the building industry. I now conclude my meditations on this subject by saying that I hope and believe there will still be young architects prepared to ignore my more worldly wisdom and go for the adventure of individual practice rather than the sinecure of departmental anonymity—just as I hope there will always be young men dedicated to the 'vanishing trades' of bricklayer, mason and tiler.

'Building Roundabout'

A selection of the first 100 of Mr. Arthur Kenyon's articles on 'Everyday Things' is now published in book form under the title 'Building Roundabout.' 'A charming book . . . his eye for oddities makes what he writes entertaining whether it is on builders' "dixy tea" or the housewife's brass' *(The Guardian)*. Price 10s. 6d. (post paid 11s. 3d.) from the Publisher, 'The Builder' Ltd., 4 Catherine-street, Aldwych, London, WC2.

Obituary

Sir Ninian Comper ; Francis X. Velarde ; L. A. Culliford ; Professor Eduard Ludwig

WITH THE DEATH, on December 22, of Sir Ninian Comper, at the great age of 96, an architect and craftsman of high distinction, the last outstanding link with the late nineteenth-century phase of the Gothic Revival, passes from the architectural scene. Born in Aberdeen on June 10, 1864, the son of a priest of the Scottish Episcopal Church and a leader of the Anglo-Catholic Revival in Scotland, John Ninian Comper came early under the influence of Anglo-Catholicism, which remained a dominant inspiration throughout his life.

G. J. HOWLING, HON ARIBA, writes:

Educated at Glenalmond, he then attended Ruskin's School at Oxford, and after a year spent in study at South Kensington and in the office of C. E. Kempe, he was articled to Bodley and Garner, upon whose teachings he based his own, sensitive interpretation of the Gothic style. He designed everything he undertook with the utmost dedication under the influence of a deep spiritual insight into the needs of the church. He was thought of chiefly as a Gothicist but he designed also in the Renaissance style, notably in St. Helena's Chapel, Ealing, the Welsh National Memorial for the 1914-18 War, at Cardiff, and the addition to St. Mary's, Rochdale. He evolved a style of his own which he called 'Unity by Inclusion.'

Like his master Bodley, and some other notable architects of the period, Comper was rigidly opposed to any system of organised architectural education, holding that it was impossible to set up examination standards for artists. Later, for much the same reason, he opposed the growing power and influence of the diocesan advisory boards. It is doubtful whether any other architect of outstanding distinction was so little known to the public. Modest and retiring in disposition, he had no desire for professional recognition or popular acclaim; he was not a member of the RIBA. He was a man of handsome appearance, bearded with a fine leonine head. All who met him were impressed by his simple dignity, his courtesy and charm of manner. He was knighted in 1950.

In addition to his own numerous churches, Sir Ninian carried out many additions to others, and he was responsible for several notable restorations. In London one of his best-known works is St. Cyprian's, Marylebone, inspired by the early Perpendicular work of East Anglia. Other churches include the crypt chapel of St. Mary Magadalene, Paddington, the chapel for All Saints Sisterhood, London Colney, St. Mary, Wellingborough, and St. Philip, Cosham.

In Westminster Abbey he designed the Warriors' Chapel, with its beautifully detailed wrought-iron screen, and he was responsible also for the Parliamentary war memorial window in Westminster Hall. Southwark Cathedral contains several outstanding examples of his decorative work, notably the three-light window of the choir, the altar-piece in brilliant gold and colour, the altar in the Harvard Chapel, the decorated and restored tomb of Bishop Andrewes, the parish war memorial (St. George and the Dragon), and the memorial to Arthur Llewellyn Preston, Bishop of Woolwich, 1932-1936, Canon and Sub-Dean of the Cathedral (both in the Lady Chapel), and the banners and vestments of the Cathedral.

Perhaps his most important achievement in the field of stained glass was the group of windows in the north aisle of Westminster Abbey. A little known but remarkable example of his restoration work is the rood-screen in the church at Bishop's Lydeard in Somerset. An unusual feature of this is the presence of gilt fish on each side of the crucifix in place of the customary figures.

To St. Barnabas, Pimlico, designed by Thomas Cundy, he added a Late Pointed Chapel at the east end of the south aisle; to St. Mary of Eton at Hackney Wick, designed by his old master Bodley, a stained glass east window ; to Bedford's St. John's, Waterloo-road, some beautiful fittings ; and to St. Alban's, Holborn, designed by William Butterfield, a superb pinnacled font cover. The two last works were destroyed by Hitler's bombers. His restorations include St. Clement's, Eastcheap, Lound, Suffolk, and Wymondham Abbey, Norfolk. Other works are the Royal Window in Canterbury Cathedral, the east window in Holy Trinity Church, Coventry, and stained glass in East Meon Church, Hampshire.

He summed up his architectural philosophy in the following words: 'There will be no wholesomeness for architecture till, abandoning all this talk about self-expression and the expression of the age, we settle down again to real work and the concentration of all our time and energies on meeting our real needs by beauty of proportion and detail in whatever style we build. No one expresses the age better than the engineer who designs an aeroplane, and no one is further from any set intention of doing so. His sole preoccupation is to make it fly.'

Sir Ninian was the sole survivor of that small but distinguished group of architect-craftsmen that flourished in the nineties and the early years of this century. With his death an era that faded many years ago passes finally into history.

Francis X. Velarde, OBE, FRIBA

WE RECORD WITH REGRET the death, on December 28 at his home in Formby, Lancs, of Mr. Francis Xavier Velarde, OBE, BArch (L'pool), FRIBA, the distinguished ecclesiastical architect. In 1937 he was the holder of the Godwin and Wimperis Bursary.

HERBERT THEARLE, BARCH, FRIBA, writes: With the death in his early sixties (he was born in 1897), of Francis Xavier Velarde, Liverpool has lost suddenly, and unexpectedly, a greatly gifted architect. The major church works he has been responsible for are mostly in and around Merseyside; lesser ones—all chapels—are to be found at Alsager, Much Wenlock and Monkmoor in the Mary Webb country.

The local ones, beginning in 1927 with St. Matthew's at Clubmoor and ending with Holy Cross Birkenhead, 1959, not only brighten the drab parts in which they are to be found but serve to make both spiritually and architecturally aware those who visit. This latest one on the Hoylake road was Velarde's favourite and has perhaps the most sumptuous interior of all. Three further churches are about to begin in the Home Counties at Potters Bar, Boreham Wood and Twickenham.

Through creative abilities given only to very few, and invariably on a limited budget, there is to be found in all his churches—in addition to all the basic architectural qualities his professional colleagues delight in—a glamour compounded of form, colour and detailing of a uniquely personal flavour: few architects today have this capacity for individual impact. This quality is also found, though necessarily less emphatically, in his schools — outstandingly in Scarborough (1936) and Southport (1938).

Inside his buildings particularly, and indeed outside them too but to a lesser degree, a spectator is lifted to their creator's own level of perception. Velarde could induce us to see clearly with our own eyes and, astonishingly, naively; shorn of all but the essentials his works have the virtue of simplicity. It is early yet for a full appraisal of his achievements but it seems not unlikely that these will come to be considered among the significant ecclesiastical contributions of our day.

In addition to the new churches, chapels and schools Velarde carried out in the past three decades, many existing interiors have been enlivened by him. To all his projects he gave much personal attention, and though, due to variable health, some of his detailed drawings were slight, all bore his individual stamp and it used to be uplifting to see them being realised in the studios and shops of the craftsmen he enlisted. Where they were concerned he was ruthless: even friendship would be waived if the job could be bettered by going elsewhere.

It will be recalled that Velarde was one of an international committee of six (of which Gio Ponti and Fritz Metzger were members) set up in connection with the building of the new basilica of St. Pius, Lourdes, the chief architect for which was Pierre Vago. Official recognition was accorded Velarde in the Honours list in 1957.

Following the first war in which he served in both the Navy and Army, he qualified under the late Sir Charles Reilly and for 25 years maintained contact with the University as a lecturer in the School of Architecture. At one stage of his career a motor accident immobilised him for a period and subsequently handicapped him—particularly during the

second war years—until the end; in the circumstances what he has achieved is remarkable. The present writer has known, as must have others, many instances of his generosity and gentleness; it is sad to bid farewell to a soul who was so wonderfully endowed, and sympathy must go to those of his family, wife and two sons at Formby, who survive him. Liverpool and the country as a whole can ill afford the loss of one who could contrive such inspired building.

His principal works were: St. Matthew's, Clubmoor (1927); St. Gabriel's, Blackburn (1931) his only Protestant church; St. Monica's, Bootle (1936); School, Scarborough (1936); School, Southport (1936); Our Lady of Pity, Greasby (1951); English Martyrs, Wallasey (1953); Chapels at Alsager (1952), Much Wenlock (1954) and Monkmoor (1955); St. Teresa's, Upholland (1955); St. Alexander's, Bootle (1956); Memorial Church, Blackpool (1956); St. Luke's, Pinner (1957); Holy Cross, Birkenhead (1959)—this was Velarde's favourite church and has a sumptuous interior; and three churches pending at time of his death at Potters Bar, Boreham Wood and Twickenham.

Leonard Arthur Culliford, FRIBA

MR. L. A. CULLIFORD, who died on December 12 at the age of 72, was elected an Associate of the RIBA in 1914, and became a Fellow in 1924. He was elected a Professional Associate of the Surveyors' Institution in 1912, and proceeded to the Fellowship in 1920. In the early 1940s he qualified for Membership of the Town Planning Institute.

He served with distinction in the Great War 1914-1918, as a captain in the Royal Engineers, and was awarded the MC and Belgian Croix de Guerre.

He commenced practice on his own about 1920—the firm of L. A. Culliford & Partners being founded in 1937.

Among the works for which he was responsible before the last war were the offices for the Associated Iliffe Press in Stamford-street, extensions for the 'Daily Telegraph' in Shoe-lane, and Headquarter premises for the Amalgamated Union of Building Trade Workers, Union of Post Office Workers, and the National Union of Seamen.

During this period Mr. Culliford was also concerned with a great deal of estate development in South London, including Petts Wood and other large estates in Kent.

During the Second World War Mr. Culliford was in the Ministry of Labour, and, later, in the Ministry of Works, where he was responsible for a building organisation working in various parts of the country on urgent war damage repair work. After the war he resumed practice with his pre-war partner, Mr. Leslie A. Chackett, FRIBA, FRICS, and they were later joined by Mr. Richard Henniker, MA, FRIBA, and Mr. Jeffrey W. Lyde, ARIBA.

Since the war, besides various housing schemes, the firm have been responsible for new offices and printing works for the 'Coventry Evening Telegraph' and the 'Walsall Observer,' extensions for Roche Products at Welwyn Garden City, and additions to Cornwall Press Ltd. in Southwark and to the National Union of Railwaymen's Headquarters buildings in the Euston-road.

Mr. Culliford was for many years president of the Beckenham Planning Group, which has continued to flourish since its foundation in 1944, and he prepared schemes for an Art Centre including a theatre and concert hall which received wide publicity.

Ill-health following a stroke early in 1958 prevented Mr. Culliford from taking any further active part in the practice, and although he had taught himself not only to write but to draw with his left hand, he retired at the end of that year.

Professor Eduard Ludwig

THE DEATH took place on December 28, as the result of an accident on the Berlin autobahn, of Professor Eduard Ludwig. A pupil and later an associate of Mies van der Rohe, Professor Ludwig designed the Airlift memorial at Berlin Templehof airport. He was 54.

Hubert Oswald Jenkins, LRIBA

WE REGRET TO RECORD the death of Mr. Hubert Oswald Jenkins, LRIBA, chief architectural assistant to Cheltenham Borough Council. He was 56.

Surrey Concern at Planning Appeal Delays

Minister to be Informed

SURREY town and country planning committee have decided to write to the Minister of Housing and Local Government expressing concern at the delays in arranging planning appeals and giving decisions, and saying that efforts to speed up the process would be welcomed.

In a report to the committee MR. H. J. TRICKETT drew attention to what he called 'the loss of money to developers and the inconvenience to the public and local authorities now being caused by the inordinate delay in arranging dates for public inquiries and promulgating the Minister's decision on planning appeals.' Mr. Trickett referred to a number of appeals in the borough of Sutton and Cheam over the last two years in which there were periods ranging from 3 to 21 months between the date when the appeal was lodged and the date of the Minister's decision.

The report mentioned that the Minister had told the Commons (his statement is on page 26.—Ed.) that the average time in the case of both planning appeals and compulsory purchase orders was about six months, but regarded this as too long and was trying to reduce it by recruiting more inspectors. The Minister had added that the number of planning appeals was currently running at 25 per cent above 1959.

Enlarging on the report, the assistant clerk, MR. P. J. MEADON, said the average time from an appeal being lodged to a decision being given was six to nine months. The number of appeals was growing each year.

MISS V. RHYS DAVIS commented that there were bound to be more appeals as the pressure on the green belt got greater.

SIR JOHN WENHAM suggested that they got the appeals and sat on them so long in Whitehall.

SIR HOWARD ROBERTS said he did not favour a deputation to the Ministry, but thought a letter should be sent to the Permanent Secretary indicating the committee's views.

Surrey Defines its Caravan Policy

Demands on Services Similar to Houses

A REPORT of the town and country planning committee defining their policy towards caravans, of which there are 4,288 in the county, was adopted by Surrey County Council on December 6.

Regarding new sites, the report stated that residential caravan sites made the same demands on services and required similar facilities to residential development. In general they could be acceptable only in areas where residential development would be acceptable or, on a temporary basis, on land reserved for some future alternative development where necessary services were available.

Residential caravan sites were not acceptable in the green belt for reasons which prohibited residential development. Residential caravans were not acceptable in the outer county ring, because of their remoteness from the necessary services and because the land uses in the area were expected to remain as they were at present.

Exceptions could be made where there was a legitimate local demand in the case of single caravans or very small groups of caravans which could be sited in suitably screened sites on the outskirts of villages. Regarding existing sites, the committee stated that it would cause hardship to close them without the provision of alternative sites.

In view of the licensing which would now control the number of caravans and standards of sites and in order to review the strength of the demand over a period of years, it might be desirable to distinguish between the existing sites, which had not got planning permission according to their merits.

The Council could grant permanent planning permission; grant temporary planning permission or grant temporary planning permission with a direction that the site should be run down by wastage.

Modern Building and its Control

By F. D. Entwisle, ARICS, AMIStructE, AMIMunE, AIAS

A paper on the above subject given in July last by Mr. F. D. Entwisle at a Northern District Summer School of the Institution of Municipal Engineers at Sheffield University made a number of valuable suggestions relevant to the question of new building regulations in the Public Health Bill now before Parliament. From this we take the following extracts. Mr. Entwisle holds an appointment in the Sheffield City Engineer's Department.

IT IS ESSENTIAL that the scope of Section 61 of the Public Health Act, 1936, be extended to provide for additional matters required by modern conditions. Section 64 of this Act should also be amended to allow a general approval of plans subject to certain structural or specialist work being submitted at a later date to specified standards and to the satisfaction of the local authority surveyor. Such a system would enable the vital detailed work, unlikely to be available when a scheme is initially submitted, to be dealt with officially at the appropriate time. It would also emphasise and clarify the responsibilities of the local authority in such matters.

Appeals and Relaxations

The machinery for appeal against a refusal by a local authority to approve a proposal is also in need of revision: matters in dispute are generally of a technical nature and a Ministry inspector on the lines adopted for town planning appeals would be a more suitable arrangement than the present reference to the magistrates.

The increase in extent of control, in spite of the greatest of care in framing regulations, must of necessity lead to more cases justifying relaxations. The present system of reference to the Minister of Housing and Local Government, whilst fair and reasonable, might well be simplified. Reference to a Regional Officer or specially appointed panel of experts followed by the usual local advertisement would help speed up matters yet at the same time guard against abuse.

New Requirements

Furthermore, as our knowledge of both design and materials advances, more attention must be given to all the needs of buildings, bearing in mind the introduction into our lives of modern transport with its accompanying noise. The thick walls and heavy roofs for so long required for structural purposes, which because of their thickness were adequate for both sound and thermal insulation, are no longer in general use. The question of thermal insulation standards has already been considered and become enforceable for certain buildings. The time has now come when standards of sound insulation should also receive consideration, looking ahead to the helicopter age with its problems of high level noise.

A National Code

There is a very good case for a national code of building regulations rather than by-laws, since this would allow more elasticity of control, in lieu of the existing system of a model series modified to varying degrees by different local authorities. There is no justification for the minor variations that now exist in the by-laws of various towns: all have the same problem to a greater or lesser degree. A national code, suitably framed, should be made applicable to all buildings, except Statutory Undertaking productive plant, irrespective of ownership or use.

Since the present building by-laws have little more than two years before becoming due for revision, work on a code of building regulations should be put into operation immediately. When drafted by the usual representative committee let them be circulated to all authorities, local and national, and to all interested bodies on both professional and contracting sides of building, for consideration during a period of one year. During this time the draft code could be tried out by all concerned alongside the existing by-laws and so ensure an effective trial period. Comments could then be submitted to the drafting committee from which the final code could be made, printed on a national basis on sale to all and sundry. This would not only assist towards uniformity of requirements but save local authorities considerable cost in printing.

Interpretation clauses should be grouped for simplicity and include such matters as a comprehensive use classes classifying the many various building uses to which special requirements as to fire-resistance, fire-prevention, sound and thermal insulation would apply; also rules as to measurements of buildings and general explanation of certain terms other than technical terms which are better dealt with in the appropriate codes of practice or standard specifications. The extent to which control is applicable to alteration, extension and change of user should also be made clear.

Apart from special engineering structures such as power stations, etc., there should be no general exemption from an accepted building code. There is need, however, for certain minor buildings to be exempt, such as those ancillary to dwelling houses, and there is no reason why such buildings of limited size should not enjoy complete exemption from control.

Other buildings of a lesser nature such as single-storey buildings used predominantly for storage should have a certain degree of exemption provided they are sufficiently isolated; a varying load factor for structural design could also be applied in these cases. Buildings of this type should be subject to some standard of structural design; it is ridiculous for such buildings to enjoy complete exemption from structural standards as is the case with the existing building by-laws.

Materials

There are now so many British Standards as to building construction and materials that there is little need for the by-laws to do other than refer to such standards as in the present series and require that all materials shall be of such quality and so used or fixed as adequately to perform the function for which they are required with an added requirement that the materials shall also be sufficiently durable. The appointment of a national committee for considering new building materials prior to acceptance would serve a most useful purpose and ease the burden of local authorities.

Structural Stability

The requirements as to structural design in buildings are now adequately covered by accepted Codes of Practice, and for the present requirement of adequate stability, by-law 21 of the model series and subsequent by-laws provide all necessary information. There is, however, a notable weakness, i.e., the Third Schedule as to wall thicknesses. Walls in accordance with this schedule are deemed to satisfy by-law requirements, yet they take no account of loading conditions or quality of brickwork, and it is quite possible to comply with this schedule yet overload a wall. For instance, the same wall thickness applies irrespective of the span of the floor or beams supported or of the super-loading on the floors. British Standard Code of Practice C.P. 111, Load Bearing Walls, covers design of brickwork adequately and if the Third Schedule is to be retained it should be as a guide only and not necessarily deemed to satisfy the by-laws.

Modern building construction involves theoretical design to an ever-increasing extent, and serious consideration is needed as to how this voluminous and vital work is to be dealt with, particularly by smaller authorities. It is nonsense to deal meticulously with such matters as ventilation, weather resistance and space about buildings, yet neglect the vital question of adequate stability.

Weather Resistance and Damp Prevention

There is little fault in the present requirements as to weather resistance and damp prevention; in this day and age it should not be beyond our resources to ensure a dry building. In view of the extent of research it should, however, be possible to provide examples of construction other than cavity walling that would, with proper workmanship, guarantee weather resistance, taking into consideration conditions of exposure.

The provisions as to the important yet vexed question of fire resistance are in need of considerable review, not so much as to constructional requirements so much as the types and extent of the appli-

cation to various buildings. For instance, a building of the warehouse class may store either steel bars or timber, yet at the moment the fire-resistance requirements are the same for both, an obviously unrealistic approach, bearing in mind the variation in fire risk and fire load and the considerable costs involved. Yet at the same time the necessary machinery must be available to enforce appropriate requirements in the case of a change of use from non-hazardous occupancy to one presenting a greater hazard.

Fire-resistance requirements must have some relationship with fire risk and fire load and occupancy of a building, and if we are to operate fire-resistance requirements with success and reason then there must be a greater variety of building uses each with appropriate fire-resistance requirements. The fire-resistance of the whole structure should be based on use, cubic capacity and height, not as at present with external walls and division wall with fixed requirements irrespective of size or types of building.

There is little to recommend the retention of the term "small house"; it would be reasonable to allow all dwellinghouses up to two-storey a degree of exemption from fire-resistance requirements subject to conditions as to size, use and isolation.

With regard to the isolation of buildings for which standards of fire-resistance may be relaxed, such distances should be realistic since the obvious reason for isolation is to prevent spread of fire by radiation. In view of the importance of fire-resisting floors, particularly where higher occupancies are in a separate tenancy, a special requirement as to separating floors should be introduced. Fire-resisting ceilings should also be required to flats which are merely divided by non-load-bearing walls extending to ceiling height only.

Fire-Spread and Fire-Prevention

Whilst the major object of the present by-laws would appear to require the structure of the building to be protected so as to withstand the effects of fire without early collapse, some requirements have been introduced which also contribute towards the reduction in fire load and the spread of fire. These provisions are: the enclosure of lift shafts and common staircases, the requirement for a vertical break between window openings in external walls, and the requirements as to certain walls being incombustible throughout except for internal linings. All these contribute towards restricting the spread of fire rather than the fire-resistance of the actual structure. The fire-break requirements between openings in storeys have rather limited usefulness according to fire research reports and practical experience, yet surely some break is better than none!

The fixing of combustible cladding to the face of a wall which in itself is fire-resisting is prohibited where a wall is to be incombustible throughout, although unfortunately there are different opinions on this matter. There is no doubt that such a facing material must add to the danger of fire spread and, where used in large areas, to the fire load of the building; both fire-prevention matters rather than fire-resistance. Yet the widespread use of timber cladding, unfortunately now so popular, is an obviously undesirable feature particularly in built-up areas and must be strictly controlled. Extensive areas of glazing need consideration.

Roofs

It has always been the practice in dealing with roof construction to consider only the external hazard from fire, there being no requirement as to fire-resistance of the supporting constructions. The regulation made under the Thermal Insulation (Industrial Buildings) Act, 1957, did, however, introduce requirements as to resistance to flame-spread in roof lining provided to satisfy the requirements of the Act as to thermal insulation. There is reason for the introduction of similar standards in the types of buildings where there is a high occupancy and where fire-spread presents a serious hazard.

The question of means of escape in case of fire is closely related to fire-resistance and fire-prevention, and as we build higher habitations, more attention is required to such matter. In high buildings more thought is required towards limiting the use of combustible materials, adequate staircase enclosure and protection and smoke stopping. The education of the occupants of such buildings towards fire should also be given attention; very often safety may well lie in moving upwards away from the source of fire rather than downwards towards doubtful safety.

These by-laws have changed little in principle since they were first formed, designed obviously to deal with the older type of street development with houses in rows. With so many odd sites now to be developed and with the great variation in siting now practised, the open space requirements should be adjusted to allow a greater freedom of siting.

The control of ventilation in buildings is now limited to the domestic class only; this should be extended to cover other types of buildings. It is ridiculous that a local authority should be unable to enforce proper ventilation in a building of the public or factory type, yet such requirements could be enforced by other authorities interested in the buildings when occupied.

Thermal and Sound Insulation

Thermal insulation in houses, a long overdue requirement, has been the subject of recent new by-laws specifying rather more stringent requirements. It is unfortunate, however, that the 'deemed to satisfy' methods of construction of both walls and suspended ground floors show no improvement on the present accepted standard of construction.

Since the commonly used 9 in. brick party wall and 6 in. solid concrete floor give reasonable standards of sound insulation we have two ready-made 'deemed to satisfy' provisions which will provide a yardstick by which other types of construction can be measured.

External walls provide a more difficult problem due to glazed areas, but there is no doubt that some standards are needed in certain areas. Enforcement of limited glazing areas, double glazing and mechanical ventilation may well become necessary for some buildings.

In view of the many changes in above ground drainage methods, and the great advance in pumping equipment, the control of drainage should be in line with modern conditions having due regard to these matters. This could be achieved by use of codes of practice for detailed provisions, the actual regulations merely stating general requirements.

As to materials, there are now several varieties of drain pipes subject to British Standard Specification, yet unfortunately a considerable quantity of pipes are manufactured with no attempt to achieve the quality of the standard tested pipes. All drain pipes for foul drainage purposes are required to achieve the same object, i.e., a durable, watertight system with a clean invert, laid to proper falls. Since drainage works once completed are expected to function satisfactorily for all time—in fact in the interest of public health this is essential—all pipes should reach a desired standard.

'Deemed to Satisfy' Provisions

The inclusion of clauses specifying methods of construction or types of materials that are 'deemed to satisfy' particular requirements are both useful and necessary. Care should be taken, however, to ensure that any 'deemed to satisfy' provision reaches the desired standard, otherwise the object of the particular requirement may well be defeated.

Popular forms of construction should not be used as 'deemed to satisfy' provisions if they do not achieve the standard considered desirable.

The recent by-laws as to thermal insulation include regrettably low 'deemed to satisfy' provisions merely from the desire to retain popular forms of construction. The list of roofing materials in the present by-laws is another example, including coverings of variable qualities as to combustibility, and in consequence does not provide a suitable yardstick by which new materials can be measured.

In any new or altered method of control let us accept at once that this cannot be dealt with adequately with existing staffing arrangements. All local authorities' staffs include inspectors, surveyors and engineers capable of dealing adequately with all problems arising in the design and construction of buildings, but unfortunately too few are generally allocated to this work. This results in those concerned being considerably overburdened and full control is soon lost, with undesirable results. All building works subject to building control do not require the attention of fully qualified or experienced inspectors, surveyors or engineers; yet even the smallest project is important to the building owner concerned. Staffs should, therefore, be graded in areas of control to suit the circumstances and so avoid highly qualified staff on minor projects.

The Week in Parliament

From Our Own Correspondent

The following business was conducted before Parliament rose for the Christmas recess on December 21. Both Houses of Parliament reassemble on Tuesday, January 24.

Land for House-building in London Area

MR. MICHAEL STEWART asked the Minister of Housing and Local Government on December 20 what survey he had made of land allocated for house-bulding in the London region; and with what result.

MR. BROOKE: 'The London and Greater London local planning authorities are readily co-operating with my Department in a survey of the land available for residential development in the area surrounded by the Metropolitan Green Belt, and in existing towns situated within the Green Belt. The object is to ensure the maximum use of land which is or can be made available for building.

'The planning authorities concerned are also considering in connection with the review of their development plans what further land can be made available beyond the green belt. Completion of the reviews must take time, but the investigation is clearly underlining the need for those more immediate measures which I have recently suggested to local planning authorities in Circular 37/60'

MR. STEWART asked if he was right in supposing that land in this area which had been allocated for house building but not yet built on, was sufficient to meet the needs of the next two or three years. What happened after that? What would be the position of people who wanted to build their own houses to their own design?

MR. BROOKE said there was anything but unlimited building land available on the inner side of the Green Belt and therefore it was more urgent that local authorities should follow up the suggestions he had made in the circular about encouraging conversions, redevelopment of older areas, review of densities, etc.

The Weights and Measures Bill

SEVERAL DAYS have been spent by the House of Lords considering the details of the Weights and Measures Bill. When the Third Schedule, which sets out the measures and weights lawful for use for trade, was reached, LORD FARINGDON moved an amendment which he said was intended to help 'do-it-yourself' enthusiasts. He wanted the measures to include those of ¼ cubic yard, ½ cubic yard or of any multiple of ½ cubic yard.

He said that builders' merchants frequently sold small quantities of goods, principally sand and ballast, to 'do-it-yourself' buyers. The one-quarter cubic yard measurement would satisfactorily replace the bushel which five years after the Bill had come into force, would no longer be an approved measure.

The EARL OF DUNDEE, Minister without Portfolio, said the Government were prepared to accept the amendment in principle. It had been represented to the Board of Trade that measures of ¼ cubic yard and multiples of that size were needed in connection with the sale of ready-mixed concrete and ready-mixed cement. The amendment would not permit this although the Government recognised that when the bushel, ½ bushel and peck measures were abolished 5½ years after the enactment of the Bill, a ¼ cubic yard measure might help traders supplying certain goods.

He would later propose amendments providing both for ¼ cubic yard and also its multiples.

LORD FARINGDON withdrew his amendment.

Other Business

Delay in Planning Appeals

MR. STONEHOUSE asked the Minister of Housing and Local Government on December 13 whether he was aware that it took five months in the County of London to arrange planning appeals; and whether he would appoint more inspectors in order to reduce this period.

MR. BROOKE wrote: 'Yes; and I am doing so. But Mr. Stonehouse will realise that recruitment and training of people for this highly specialised work cannot be done very quickly.'

Gift of Swansea Castle

LORD JOHN HOPE, Minister of Works, announced on December 20 that the owners of Swansea Castle had offered this important monument as a gift to the State and he had accepted their offer. Certain urgent first-aid repairs had already been carried out and they would now proceed with a planned programme of clearance and permanent preservation work which would take some years.

Replacement of Dwellings by Offices

MR. SORENSEN asked the Minister of Housing and Local Government on December 20 approximately how many properties used for domestic accommodation in the Metropolitan Police area or in the county of London had been or were being demolished for replacement by office or business buildings; approximately how many persons had been affected by this; and what information he had regarding the extent to which the price of land for house building purposes had risen during the past five years in either of those two areas in consequence of such demolition, or for other reasons.

MR. BROOKE: 'Although figures are not available, I have no reason to think that any large-scale demolition of residential buildings to make way for offices has taken place in the county of London since 1955, when the development plan was approved. I have given and will continue to give my support to the policy of the local planning authority to preserve residential uses, wherever possible, and to curb excessive office building. I am now considering certain amendments to the county development plan which have been put to me with the purpose of strengthening this policy still further. I have no evidence that land in the County of London has increased in price as the result of the demolition of houses for office development.'

Thames Flood Barrage

MR. DODDS asked the Minister of Housing and Local Government on December 20 what progress had been made in the consultations with respect to the suggested Thames Flood Barrage.

SIR KEITH JOSEPH: 'The Minister recently asked the local authorities and other statutory bodies most directly concerned for their views on certain aspects of the Thames flood barrier project. He hopes to have these very shortly.'

MR. DODDS said it was disgraceful that the barrier was suggested by the Waverley Committee in 1953 and it was still only at talking point. SIR KEITH said it was a complex matter. There was a meeting the previous week of all the interests, the results of which would be reported to the Minister almost immediately.

Development of Railway Property

The Government's scheme for the reorganisation of the nationalised transport undertakings, outlined in a White Paper published on December 20, includes a proposal to set up one or more organisations specially equipped to advise the railway boards with the object of obtaining the best possible return on the development of their property. They would also deal with the transfer or disposal of any property that was no longer required for operational purposes.

Cost of New Victoria Tube

The latest estimated cost of the Victoria Line tube is £55m., MR. ERNEST MARPLES, Minister of Transport, stated on December 21. He said the scheme presented financial and other difficulties which could only be assessed in the light of the Government's general consideration of the BTC and their undertakings.

Official Notification

Serpentine Chippings Exemption

THE BOARD OF TRADE give notice that they are considering an application for the exemption from import duty of chippings of serpentine. A statement of the applicants' case will be made available to all interested parties who wish to make representations in the matter, if they are prepared to give an undertaking to treat the information contained therein as strictly confidential and to allow their comments to be passed to the applicants for reply. Requests for a statement of the case, together with an undertaking in the terms set out above, should be addressed in writing to the Board of Trade, Tariff and Import Policy Division, Horse Guards-avenue, London, SW1, not later than January 10.

THE BUILDER LONDON MEASURED RATES

These prices for new building work in London normally appear in the first issue of each month only. The prices are inclusive of all allowances for National Insurance, Holidays with Pay and Public Holidays, Third Party Risk, Travelling Allowances and Guaranteed Week. They cover a profit of 10 per cent on the prime cost without any addition for establishment charges.

These rates do not include for Foremen and other preliminary items, such as office, sheds, plant and scaffolding, etc., and these must be added accordingly.

The basic cost of the labour and materials used in arriving at the rates has been derived from the 'Current Prices of Materials' published in *The Builder*.

The data given are copyright. While every endeavour is made to ensure accuracy, we do not hold ourselves responsible for any error that may occur.—EDITOR.

EXCAVATOR

All hand labour	*Per yd. cube*									
	Loose earth		*Firm soil*		*Stiff clay*		*Chalk and flints*		*Rock, etc., no blasting*	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Surface excavation to shallow depths	8	3	10	3	11	9	17	10	46	0
Bulk do. or large trenches, etc., not exceeding 5 ft. deep ...	7	6	9	4	10	9	15	10	42	0
Trenches do. under 4 ft. 6 in. wide and do.	10	0	12	1	14	0	20	8	55	0
Pier holes and similar under 6 ft. square and do.	11	3	13	10	16	2	23	9	61	6
Additional throw for every 5 ft.:										
Bulk excavation	3	9½	3	9	5	5	5	5	6	2
Trench ,, ...	5	0	5	0	6	8	6	8	7	8
Pier ,, ...	5	7	5	7	7	6	7	6	8	6
Return, fill and ram	5	2	5	2	6	8	6	8	8	2
Wheeling surplus n.e. 100 yds. run and depositing	7	2	8	0	8	0	8	0	9	0
Underpinning in trenches ...	13	4	18	6	21	6	30	9	—	

	s.	d.
Loading lorries and transporting to tip ... ... Yd. cube	16	5
Basketing out and depositing ... ... ,,	10	0
Planking and strutting to sides of surface or basement trenches :		
Depth up to 5 ft. ... ... Ft. sup.		6
,, ,, 10 ft. ... ... ,,		8
,, ,, 15 ft. ... ... ,,		9
Hardcore :		
Filled-in layers and consolidated ... ... Yd. cube	22	3
do. 4 in. thick ... ... Yd. sup.	3	3
do. 6 in. thick ... ... ,,	4	4

CONCRETER

	Basic yard cube rates			
	1 : 12	1:3:6	1:2:4	1:1½:3
Aggregate	1½ in. all-in	1½ in.	¾ in.	½ in.
Concrete in normal foundations : (minimum 6-ton cement loads)—	s. d.	s. d.	s. d.	s. d.
Portland cement standard specification	66 3	74 1	81 1	85 1
Portland cement rapid hardening...	67 6	75 11	83 7	88 5
Water-repellent cement	70 3	79 10	89 4	95 7

	s.	d.
Add to above basis for :		
4 in. surface beds ... ... Yd. sup.		7½
6 in. ,, ,, ... ,,		8½
(If above two items worked around mesh reinforcement, add 5d. per yd. *super.*)		
Foundations in underpinning in short lengths... ... Yd. cube	16	4
Beds and flaunchings to drains ... ... ,,	8	2
Pier or stanchion foundations—small ... ... ,,	4	1
Sundry small items not exceeding 3 ft. cube in plinths, curbs, padstones, etc. ... ... ,,	21	6

REINFORCED CONCRETE

ADD to above 'Basic Yard Cube Rates'

Reinforced concrete including working around reinforcement between formwork and hoisting to normal levels :	s.	d.
Foundations and similar ... ... Yd. cube	5	5
Isolated stanchion or pier bases ... ... ,,	6	5
walls not exceeding 6 in. thick ... ... ,,	26	8
,, ,, ,, 12 in. ,, ... ,,	18	8
Suspended floors or flat roofs 4½ in. thick ... ... Yd. cube	21	6
,, ,, ,, ,, 6 in. ,, ... ,,	17	5
,, ,, ,, ,, 9 in. ,, ... ,,	14	10
(Beams attached to floors or flats, *add* 6/8 yd. cube)		
Isolated beams or lintels average 72 sectional inches ... ,,	32	3
Do. average 144 sectional inches ... ... ,,	24	1
Columns or stanchions average 72 sectional inches ,,	37	8
,, ,, ,, ,, 144 ,, ,, ,,	29	5
Staircases and landings, etc. ... ... ,,	56	1
Shell roofs average 3 in. thick, including labour forming curved surface ... ... ,,	133	3
Hollow tile floors :		
Hollow clay tiles 4 in. thick with 1 : 2 : 4 concrete ribs at 14 in. centres with filler tiles and 1½ in. fine concrete screed (excluding reinforcement and form work) ... ... Yd. sup.	19	4
All as above but 6 in. thick clay tiles ... ... ,,	23	5
,, ,, ,, ,, 9 in. ,, ,, ,, ... ,,	32	7
Sundry items :		
2 in. concrete (1 : 2 : 4) blinding bed ... ... Yd. sup.	5	0
Spade finish to concrete beds ... ... ,,		10
Trowel ,, ,, ,, ... ,,	1	10
Laying to falls and currents ... ... ,,	1	0
Hacking concrete by hand ... ... ,,	2	8
Hacking concrete by use of proprietary liquids ... ,,	1	7
Damp-proof membrane in three coats with sanded key ... ... ,,	4	10
¾ in. Bitumen expansion joints 4 in. deep in floors ... Yd. run	3	11

	Mild steel rods (round) cut, bent, hooked, wired and fixed complete (Ex. London Stock)							
	¼ in.		⅜ in.		½ in.		⅝ to 1 in.	
Reinforcement :	s.	d.	s.	d.	s.	d.	s.	d.
Floors beams laid in only ...	88	6	79	4	73	8	70	3
,, ,, ,, wired into frames	100	7	90	0	85	10	80	3
Walls wired into frames	100	7	90	0	85	10	80	3
Columns wired into frames ...	100	7	90	0	85	10	80	3
Staircases wired into frames ...	102	11	92	4	88	2	82	7

	s.	d.
Steel mesh fabric reinforcement :		
Laid in floors including laps and straight cutting and wiring, etc. :		
Weight 3·94 lb. per yd. sup. ... ... Yd. sup.	4	3
,, 4·71 lb. ,, ,, ,, ... ,,	4	6
,, 9·32 lb. ,, ,, ,, ... ,,	8	4
Raking cutting worth 6 in material cost per ft. run		
Circular cutting worth 9 in. material cost per ft. run.		
Formwork (Sawn) including strutting, easing and removal and average four times use of timber :		
Soffit of floors and flat roofs ... ... Yd. sup.	16	9
Sloping soffits of stairs ... ... ,,	22	10
Barrel-vault soffits of floors and roofs ... ... ,,	21	4
Vertical sides of walls ... ... ,,	16	0
Battering sides of walls ... ... ,,	20	10
Columns ... ... Ft. sup.	2	5
Lintels and beams ... ... ,,	2	7
Staircase strings cut to tread and riser ... ... Ft. run	3	7
Edges of concrete floors, etc., up to 12 in. deep per inch in height ... ... ,,		2½
Rebates or similar per inch girth up to 6 in. girth... ,,		2½
Raking cutting ... ... ,,		8½
Extra cost for wrought shuttering and labour rubbing down to leave fair face on concrete ... Yd. sup.	2	7
Pre-cast Concrete (1 : 2 : 4) *including fair face :*		
4½ in. x 6 in.reinforced lintels ... ... Ft. run	3	0
9 in. x 6 in. ,, ,, ... ,,	5	3
9 in. x 9 in. ,, ,, ... ,,	8	7
Steel Formwork :		
Steel shuttering forms with patent expanding floor centres and telescopic props not less than four times use on each job with continuous use ... Yd. sup.	11	6

Partitions : (Minimum 100 yd. super)	Yd. super rate			
	2 in.	3 in.	4 in.	6 in.
	s. d.	s. d.	s. d.	s. d.
Clinker concrete slab partitions in cement mortar	9 8	12 2	14 2	—
Cranham terra cotta slab partitions in cement mortar	13 2	16 2	19 1	—
Moler partition block partitions in cement mortar	18 2	23 3	25 11	—
Thermalite-Ytong partition blocks in cement mortar	—	15 8	19 4	27 7

Cuttings :

Raking cutting and waste = ⅓ of ft. sup. rate
Circular „ „ „ = ½ of ft. sup. rate
Cutting around openings = ¼ of ft. sup. rate
Cutting and bonding at angles, intersections and ends all at 6d. ft. run.

BRICKLAYER

	Yd. super rates			
	Plain flettons	Rough stocks	Second stocks	Blue wire-cuts
	s. d.	s. d.	s. d.	s. d.
Brickwork in cement mortar (1 : 3) reduced to one brick thick	38 1	51 4	61 0	92 0
Deduct if in 1 : 1 : 6 cement-lime mortar	10	10	10	10
Add if in :				
Filling in openings	5 8	5 8	5 11	7 2
Backing to masonry	2 10	2 10	3 0	3 8
Building overhand	1 10	1 10	1 11	2 2
Raising on existing work	2 10	2 10	3 0	3 8
Circular on plan to quick sweep ...	5 6	5 6	5 9	6 10
Small detached piers, plinths, etc.	8 4	8 4	8 9	10 5
Underpinning	5 6	5 6	5 10	6 11
Brick-on-edge walls	13 1	18 1	21 1	—
Half-brick sleeper walls honeycombed	13 8	18 6	—	—
Half-brick walls	21 4	29 1	33 9	50 6
do. with fair face and pointing both sides as work proceeds	24 8	—	37 3	54 6
One-brick wall with fair face and pointing both sides as work proceeds	43 4	—	66 0	97 10
11 in. cavity brick wall with two half-brick skins with 2 in. cavity and three galvanised iron twisted ties to every yd. sup.	46 3	—	71 2	—

		s. d.
Sundry items :		
Horizontal double slate damp-proof course ...	Ft. sup.	3 4
Vertical „ „ „ „ ...	„	4 1
Hessian-base bitumen damp-proof course	„	1 6
Levelling and preparing for raising on	„	1 0½
Cutting, toothing and bonding new to old	„	3 8
Wedging and pinning with slates in underpinning ...	„	5 2
Rough cutting	„	6
Cutting and fitting brickwork around steel	„	6
Bed and point frame one side	Ft. run	4
Rough cutting squint or birdsmouth	„	6½
Labour plumbing angles on faced work	„	2½
Rake out and point to lead flashing	„	7½
„ „ „ „ stepped flashing	„	10½
Cutting groove for skirting and point	„	1 7
Shallow chases for small pipes and conduit	„	1 9
Metal reinforcement 24 gauge 2½ in. wide	„	4½
Faced work : (Flemish bond) :		
Add or deduct for every 10s. per 1,000 difference from basic price of common bricks in Flemish bond in solid work	Yd. sup.	9
do. to half-brick wall in stretcher bond	„	6½
Add for extra labour to each side in facings and pointing as work proceeds	„	3 2
do. butt joints raked out and pointed with special mortar	„	6 3
If built in English bond, add 12½ per cent to above items.		
Labours :		
Fair cutting	Ft. run	1 1½
Fair circular cutting	„	1 4
Fair squint or birdsmouth cutting	„	1 9

		9 in. wall	14 in. wall
Copings :		s. d.	s. d.
Brick-on-edge coping in flettons finished fair and pointing as work proceeds ...	Ft. run	2 5	3 3
Add for every increase by 10s. per 1,000 in cost of superior bricks	„	1	1½
Add for two courses of roofing tiles under and cement weather fillets on both sides	„	3 7	4 4
Cills :			
Two courses of roofing tiles laid breaking joint in cement mortar, set weathering and pointing ...	Ft. run	3 7	
Arches :			
Extra over fletton brickwork for brick-on-end flat arch 4½ in. on soffit and 9 in. high in facings p.c. 350s. per 1,000 and pointing	Ft. run	3 7	
Extra over fletton brickwork for fair axed arch in stock facings p.c. 350s. per 1,000 and pointing (cuttings measured separately)	Ft. sup.	9 3	

CURTAIN WALLING

Curtain walling of hollow, extruded, aluminium alloy mullion and transom units fixed together to form a grid to conventional steel and concrete framework, including glazing complete and a reasonably priced infilling panel and subject to the number of vents, etc., required, a fair average price is from 22/- to 27/6 per ft. sup.

PAVIOR

	Yd. super rates			
	½ in.	¾ in.	1 in.	1¼ in.
	s. d.	s. d.	s. d.	s. d.
Cement screed (1 : 3) to receive pavings	4 5	5 3	6 1	6 11

		d.
Add to above for :		
Trowelling smooth	Yd. sup.	7
Narrow widths or small quantities—add 25 per cent. to plain surfaces : Laying to falls	„	4

	Yd. super rates			
	1 in.	1¼ in.	1½ in.	2 in.
	s. d.	s. d.	s. d.	s. d.
Granolithic paving (1 : 2½) laid on concrete	8 9	9 11	12 0	13 2

		s. d.
Add to above for :		
Narrow widths or small quantities—add 25 per cent to plain surfaces.		
Surface hardening with three coats of silicate of soda	Yd. sup.	1 5
Carborundum finish with 2 lb. per yd. sup. trowelled in	„	3 0
¾ in. skirting 5 in. high covered at bottom and fair top edge	Ft. run	2 9
Mitres and ends—7d. each.		
Composition flooring ¼ in. thick	Yd. sup.	18 0
Terrazzo paving ⅜ in. thick	„	45 0
Rubber flooring ¼ in. thick	„	65 0

ASPHALTER

		Mastic BSS 988	Natural rock BSS 1162
Asphalt roofing :		s. d.	s. d.
¾ in. flat to falls in two thicknesses on felt underlay on prepared screed	Yd. sup.	14 3	20 0
do. in small quantities or narrow widths	Ft. sup.	2 0	2 9
6 in. high skirting with angle fillet and splayed edge at top	Ft. run	2 7	3 0
External angles on do.	No.	7	7
Internal angles on do.	„	7	7

		Mastic BSS 1097	Natural rock BSS 1418
Asphalt Damp-proof Course and Tanking :		s. d.	s. d.
Vertical damp-proof course in 2 thicknesses	Yd. sup.	21 0	27 0
do. in narrow widths	Ft. sup.	2 6	3 4
¾ in. Horizontal damp-proof course in two thicknesses	Yd. sup.	14 4	19 9
do. in narrow widths	Ft. sup.	1 10	2 6
Vertical tanking in three thicknesses ...	Yd. sup.	25 0	31 4
1¼ in. Horizontal do. in three thicknesses	„	19 3	29 2
Labour double angle fillet	Ft. run	1 4	1 4

DRAINLAYER

	Per yd. run Depth of trench				
	2 ft.	3 ft.	4 ft.	5 ft.	10 ft.
	s. d.	s. d.	s. d.	s. d.	s. d.
Excavate trench, part return fill and ram and remove surplus, inc. planking and strutting. (In firm soil—if in clay or chalk adjust in accordance with previous excavation rates)	8 3	21 7	28 10	36 0	106 3

	Per yd. run		
	4 in.	6 in.	9 in.
	s. d.	s. d.	s. d.
Concrete (1: 6–1½ in agg.) 12 in. wider than external diameter of pipe in 4 in. bed and benching up on both sides	8 0	8 10	11 3
do. but 6 in. bed and do.	9 7	11 3	13 7
do. but 4 in. bed and surround to pipe	11 7	14 5	19 0
do. but 6 in. bed and surround to pipe	15 7	18 10	23 9
	Per ft. run		
Salt glazed drain pipes laid and jointed in trench (Minimum two-ton loads):	4 in.	6 in.	9 in.
	s. d.	s. d.	s. d.
'Seconds'	2 8¼	3 10	6 1
'Best'	2 11	4 2½	6 9½
'Best Tested'	3 7¼	5 1½	8 7
'British Standard'	3 1¾	4 5½	7 3½
'British Standard Tested'	3 8¾	5 5	8 11
Extra for bends 'Best' quality	4 0	5 10	16 11
Extra for junctions 'Best' quality	7 0	9 11	21 4
Cast-iron drain pipes to BSS 437 laid and jointed with molten lead in trench	17 0	25 0	—
Extra for:			
Short lengths	4 0	5 1	—
Bends and extra joints	25 8	68 10	—
Junctions and do.	51 9	118 0	—
Cast-iron gulley trap with 9½ in. x 6½ in. grating and joint	45 2	—	—
Cast-iron rainwater shoe with vertical inlet, inspection door and bedding and joints ...	70 3	—	—
Cast-iron inspection fittings with single branch fitting one side	164 0	—	—

	Per ft. run		
	3 in.	4 in.	6 in.
	s. d.	s. d.	s. d.
Pitch fibre pipes to BS 2760 and laying and jointing in trench (in loads of £60 to £250)	2 6	3 3	6 2

		4 in.	6 in.
Manhole items:		s. d.	s. d.
Brown glazed stoneware straight half-round channels	Each	5 4	7 8
do. ordinary channel bends	,,	11 10	16 11
Three-quarter section curved channel bends with splayed ends	,,	15 0	21 6
Cast-iron heavy galvanised steps	Each		13 0
Bedding and sealing medium weight manhole covers and frames (cost of cover to add)	,,		10 0
do. heavy road covers and frames	,,		13 3

MASON

		Per ft. cube		
		Bath	Portland	York
		s. d.	s. d.	s. d.
Stone and all labours fixed in:				
Ashlar average 6¾ in. on bed ...	Ft. sup.	32 8	37 5	39 0
Moulded string course 9 in. x 6 in.	Ft. run	28 4	31 0	33 10
Moulded cornice 18 in. x 9 in. ...	,,	71 6	77 6	82 6
Weathered and throated cills:				
9 in. x 3 in.	,,	17 10	19 3	20 7
12 in. x 6 in.	,,	35 9	38 0	40 2
Weathered and throated copings:				
12 in. x 3 in.	,,	19 3	21 0	21 9
14 in. x 6 in.	,,	38 0	43 0	44 6
Plinth rubbed top and face size:				
4½ in. x 9 in.	,,	19 6	21 9	21 0
Plain steps, size 12 in. x 6 in. ...	,,	—	—	35 9
,, ,, ,, 14 in. x 2 in. ...	,,	—	—	16 9
Riser, size 2 in. x 4 in. ...	,,	—	—	8 0
2 in. Sawn paving edges squared in random sizes	Yd. sup.	—	—	98 0
Supplied only:				
Templates and cover stones coped edges	Ft. cube	—	—	33 6

ROOFER

	Yd. sup.
	s. d.
Bituminous built-up roofing in two layers of felt, the first layer 45 lb. and the second 55 lb. to BS 747, covered with limestone or granite chippings n.e. ¼ in. thick	10 0
All as above but in three layers, the first and second layers in felt 45 lb.	13 9

	Steel Tees at	
	2 ft. 0½ in. centres	4 ft. 0½ in. centres
	s. d.	s. d.
2 in. compressed straw building slabs in standard sizes fixed complete with 18G steel tees with fixing clips to steel structure to form roof decking:		
Areas of 50–100 yds. sup.	27 8	21 4
,, 101–250 ,, ...	26 10	20 9
,, 251–750 ,, ...	26 0	20 3
,, Over 750 ,, ...	25 2	19 4
If 16G steel tees are used—Add to above ...	1 5½	9

Welsh Slating	Per square		
	16in.x8in.	18in.x10in.	20in.x10in.
	s. d.	s. d.	s. d.
Laid with 3 in. lap and 2 zinc nails each slate	380 0	408 0	499 0
Additional labours:			
Top edge cutting ... Ft. run	9	9	9
Square abutment do. ,,	9	9	9
Double course at eaves... ,,	1 3	1 3	1 3
Raking, cutting and waste ,,	11	11	11
1½ in. x ¾ in. slate battening for last ... ... Per sq.	36 9	33 0	29 3

Roof Tiling	Per square		
	Berkshire hand-made	Stafford machine made	Concrete Tiles
	s. d.	s. d.	s. d.
Roof tiling with 10½ in. x 6½ in. tiles laid to a 4 in. gauge, every fourth course fixed with two galvanised nails	264 0	253 0	163 3
1 in. x ¾ in. tile battening for last	39 6	39 6	39 6
Additional labours:			
Top edge cutting ... ... Ft. run	9	9	9
Square abutments do. ... ,,	9	9	9
Raking cutting to hips ... ,,	11	11	11
Eaves course ... ... ,,	11	11	11
Half-round ridge and hip tiles ,,	2 11	2 11	2 11

CARPENTER AND JOINER

	Ft. cube			
	Plates	Joists	Rafters & Partitions	Roof trusses
	s. d.	s. d.	s. d.	s. d.
Softwood carcassing, including all waste, nails, hoisting and fixing	17 1	19 10	22 10	27 4

	Per square		
	¾ in.	1 in.	1¼ in.
	s. d.	s. d.	s. d.
Boarding and Flooring: (Softwood):			
Rough boarding to flats and roof ...	125 0	160 0	194 9
Softwood plain edge flooring cleaned off	155 0	173 6	211 0
Tongued and grooved flooring cleaned off	169 0	195 4	237 0

		s. d.
Extra for 2 in. x 3 in. average firrings	Per sq.	81 7
Herringbone strutting to 2 in. x 8 in. joists	Ft. run	1 10
1 in. gutter boarding and bearers	Ft. sup.	3 9
Raking cutting and waste on 1 in. flooring	Ft. run	9
Composition Boards, etc.:		
⅛ in. hardboard to BS 1142 fixed to vertical battens	Yd. sup.	6 9
½ in. insulation board to BS 1142 do. do.	,,	6 11
1 in. woodwool slabs fixed to flat or sloping soffits	,,	9 7
2 in. compressed straw building slabs in standard sizes fixed to wood bearers to flat or sloping surfaces in quantities of 101 to 250 yds. super	,,	14 8
¼ in. flat asbestos sheeting fixed vertically	,,	11 0

	s.	d.
Wood Block Flooring:		
1 in. nominal West African mahogany flooring laid herringbone pattern in mastic ... ... Yd. sup.	34	6
1 in. do. Agba ... ... ,,	34	6
1 in. do. Sapele ... ... ,,	36	3
1 in. do. Beech ... ... ,,	39	0
1 in. do. Rhodesian Teak ... ... ,,	52	0

Extra for preparing and polishing 2/3 yd. sup.

	Sectional area		
	n.e. 4 in.	*4–6 in.*	*ex. 6 in.*
Skirtings:	s. d.	s. d.	s. d.
Softwood skirting with rounded or moulded edge, planted on including all labours in short lengths, mitres, etc., per in. in sectional area	3½	3¼	2¾

Labours over 6 in.—Mitres=1 ft. run. Return mould ends=1 ft. 6 in. run
Sawn grounds nailed 3½d. ft. run. If plugged+7d. ft. run.

	Ft. super	
	Large sqrs.	*Small sqrs.*
Sashes and Frames: (Softwood):	s. d.	s. d.
1¼ in. rebated, rounded or moulded fixed	3 7	5 9
2 in. ,, ,, ,, ,, ...	4 0	6 2
Add for hanging on butts ... ... each	2 9	2 9
Double-hung sashes and frames with oak cills, purpose-made and not less than 1 doz. in each order:		
Quantities under 1 doz.—add up to ¼ according to quantity. (Average size 4 ft. x 5 ft.)	10 8	14 6

Extra cost of boxed mullions 1s. ft. sup.
Extra for hanging sashes with lines, weights and axle pulleys 47s. each.

	Ft. super			
	1¼ in.	*1½ in.*	*1¾ in.*	*2 in.*
Doors: (All-purpose-made) (Softwood)	s. d.	s. d.	s. d.	s. d.
Softwood skeleton framed with hardboard flush both sides (standard internal pattern)	3 7	4 0	4 5	4 10
Framed, ledged and braced	—	5 1	6 2	6 4
Four panel square framed both sides	4 10	5 7	6 7	6 10
Add for each side moulded on last...	6	6	6	6
do. flush framed	1 0	1 1	1 3	1 3
do. bead and butt do.	1 3	1 4	1 6	1 6
do. bolection moulded do.	1 6	1 6	1 6	1 6
do. raised and fielded do.	—	2 4	2 4	2 4

Rebated and beaded meeting stile 4d. ft. run.
Dwarf doors add up to 50 per cent according to size.

	Sectional area		
	n.e. 6in.	*6-12 in.*	*ex. 12in.*
Window and Door Linings and Frames:	s. d.	s. d.	s. d.
Softwood linings per inch of sectional area	4½	4	3½
Add for cross-tongueing	—	1	¾
Frames, including rebating and once moulded or equivalent of two run labours, per sectional inch	4	3½	3

Transomes and cills plus 10 per cent on frames.
Additional run labours plus 1½d. per ft. run.

	Per ft. run			
	Sectional area			
	1 in.	*2 in.*	*4 in.*	*6 in.*
Softwood Bearers, Fillets and Mouldings, etc.:	s. d.	s. d.	s. d.	s. d.
Wrot grounds, bearers, fillets, etc.	4½	7	11	1 3
Mouldings, picture rails, architraves, etc.	5	7½	11½	1 4
Framed legs and bearers or similar	9	11	1 4	1 10
Glazing beads, mitred and bradded	6	8½	—	—
Add for plugging	6	6	6	6
Add for brass cups and screws ...	2½	2½	2½	2½

	Thickness			
	¾ in.	*1 in.*	*1¼ in.*	*1½ in.*
Shelving (Softwood):	s. d.	s. d.	s. d.	s. d.
Slat shelving 2 in. wide spaced 1 in. between ... ... Ft. sup.	2 0	2 3	2 8	3 1
9 in. shelving ... ... Ft. run	2 0	2 4	2 10	3 6
Shelving over 9 in. wide ... Ft. sup.	2 7	2 11	3 7	4 2

1 in. x 2 in. chamfered bearers in short lengths, plugged, each 2s. 3d.

	Ft. super	
	1 in. treads	*1¼ in. treads*
Staircases (Softwood):	s. d.	s. d.
Treads and risers with moulded nosings, glued, blocked and bracketed on carriages	6 3	7 0
Cross-tongued winders	8 3	9 4

	s.	d.
Strings, framed ... ... Ft. run	4	9
Housings for treads and risers ... ... Each	3	0
1 in. x 1 in. sq. balusters framed each end on rake ... ,,	4	1
3½ in. x 3½ in. sq. framed newel ... ... ,,	5	2
Mahogany handrail, average 3 in. x 3 in. ... ... Ft. run	8	10
,, ,, ramped ... ... ,,	26	0

FIXING ONLY IRONMONGERY

All to Softwood:	*Each* s. d.		*Each* s. d.
Barrel bolts	1 9	Rim locks	5 2
Flush bolts	6 3	Mortice locks	11 0
Sash fasteners	3 4	Overhead door springs...	14 6
Casement fasteners ...	2 3	Patent floor springs and	
Cupboard locks	5 0	oil	36 3

FOUNDER AND SMITH

	s.	d.
Fabricated steelwork of basis section including hoisting and fixing at various levels :		
Rolled steel joists ... ... per cwt.	90	0
Compound girders ... ... ,,	97	0
Stanchions ... ... ,,	102	3
Compound stanchions ... ... ,,	108	0
In roof work—trusses and purlins ... ... ,,	122	0
(Average prices, not for awkward work)		
Cleats, brackets, packing pieces, etc., in connections, including rivets and bolts ... ... ,,	147	6
Wrot iron framed cat ladders ... ... ,,	148	0
	to 168	0

PLUMBER

	Per ft. run		
	3 in.	*4 in.*	*5 in.*
Cast iron rainwater goods: (Under 5 cwt. lots) :	s. d.	s. d.	s. d.
Half-round gutter jointed in red lead and bolted and fixed with iron brackets	3 2	3 9	4 7
Extra for stop ends ... ... each	2 5	3 0	3 11
do. angles or outlets ... ... ,,	5 10	6 2	7 3
O.G. gutter of ¼ in. metal fixed as above	3 8	4 2	4 11
Extra for stop ends ... ... each	2 9	3 4	4 4
do. angles or outlets ... ... ,,	6 7	6 9	8 1
	2 in.	*3 in.*	*4 in.*
Rainwater pipe jointed in red lead and tow fixed to brickwork with pipe nails and distance pieces: ¼ in. metal	4 3	4 10	6 3
Extra for shoes ... ... each	5 0	6 10	9 2
do. bends ... ... ,,	5 9	8 1	10 4
do. junctions ... ... ,,	7 9	11 0	14 1
Cast iron soil and waste pipes: (Under 5 cwt. lots) :	*2 in.*	*3 in.*	*4 in.*
Soil, waste or ventilating pipes with caulked joints fixed to brickwork with pipe nails and distance pieces : 13/64 in. metal	6 2	7 3	9 6
Extra for bends ... ... each	13 7	16 2	20 2
do. junctions ... ... ,,	16 10	23 3	29 2
do. oval access door to any fitting ,,	16 6	16 6	21 3
Extra cost for type 'E' holderbat fixing and cutting and pinning to brickwork ft. run	1 6	1 7	1 7½

	Soakers	Flats	Gutters, valleys, etc.	Flash-ings	Stepped Flash-ings
External leadwork: (Over 1 ton):	s. d.	s. d.	s. d.	s. d.	s. d.
Milled lead and labour in per cwt.	138 0	163 7	176 7	183 1	196 1

Labours, etc.: Double welt	ft. run		1 0
Copper nailing: Open	,,		7
Close	,,		1 0
Soldered seam	,,		6 7

	2 in. x 10 lb.	3 in. x 15 lb.	4 in. x 19 lb.
Lead pipes: (Over 1 ton):	s. d.	s. d.	s. d.
Soil, waste and ventilating pipes, fixed to walls with plain lead tacks and brass screws ... ... per ft.	10 10	14 2	18 7
Extra for: Lengths under 4 ft. ... ,,	3 0	3 6	4 6
Bends ... ... No.	12 6	23 9	24 10
Wiped soldered joints ... ... ,,	20 0	29 7	33 7
,, branch joints ... ... ,,	24 4	35 0	39 3

	Per ft. run					
	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Lead pipes including running joints:	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Main in trench ...	3 4	5 0	7 5	9 3	11 9	16 5
do. fixed with hooks	4 0	5 10	8 8	10 8	13 4	18 3
Service and do. ...	3 5	5 0	6 11	8 3	10 4	13 4
Waste and do. ...	2 8	3 11	5 7	6 7	8 4	10 11
Extra for lengths under 4 ft. ...	9	1 0	1 6	1 9	2 0	2 7
Soldered stop ends ... ... No.	2 6	3 0	3 9	4 6	5 2	6 8
do. joints to fittings ... ,,	6 6	9 2	11 0	13 4	16 3	19 9
do. branch joints... ... ,,	7 2	10 1	12 2	14 10	17 11	21 8
Brasswork:						
Union with red lead joint to iron and soldered joint to lead ... ... ,,	12 0	14 10	18 6	22 9	27 10	40 6
Stop-cock and soldered joints... ... ,,	21 0	30 8	43 7	70 0	89 6	167 5
Bib-cock do. ,,	18 6	24 9	—	—	—	—
Ball-valve do. ,,	18 0	30 4	43 5	71 7	89 6	—
Steel tubing:						
Galvanised tubing Class C laid in trench	2 4	2 6	2 10	4 1	5 6	6 6
do. Class B fixed to walls, etc. ...	2 7	3 0	3 4	4 5	6 2	7 1
Extra for bends No.	5 0	5 9	7 7	9 10	11 8	17 2
Tees ,,	5 8	6 9	8 2	10 10	12 10	18 8
Red lead joints ,,	3 6	3 9	4 1	4 7	5 1	5 7
Copper tubes and fittings: gauge	19	19	18	18	18	17
Tubes and fixing to walls	2 7	3 4	4 6	5 5	6 4	9 2
Extra for lengths under 4 ft. ...	7	9	11	1 0	1 3	1 6
Brass capillary type fittings:						
Couplings—copper to copper ...	3 8	4 4	6 9	8 9	11 2	15 3
Bends— do. ...	5 10	7 1	8 11	11 7	17 2	32 3
Tees— do. ...	8 7	9 11	14 2	19 2	26 3	36 4
Stop cocks	23 7	33 1	60 2	101 2	152 3	250 4
Tank connectors ...	4 9	5 4	8 1	10 2	14 3	18 4

PLASTERER

		s. d.
Expanded metal lathing ⅜ in. mesh 24 gauge ... (not including hangers for suspended work)	Yd. sup.	8 6
Lime Plastering: Render, float and set	,,	9 11
Sirapite Plastering: Render in Portland Cement, Lime and Sand and set in Sirapite	,,	7 9
Sirapite Plastering: Render and set in Sirapite plaster to manufacturer's instructions	,,	8 0
Paristone Plastering: do. do.	,,	8 3
Carlite Plastering do. do.	,,	8 10
Portland Cement: Plain face trowelled smooth ...	,,	9 11
Keenes: Render in cement and lime and set in Keenes	Yd. sup.	10 6
Extra for dubbing out ¼ in. thick 1/11, ½ in. thick 3/11		
⅜ in. Plasterboard and setting coat ...	,,	8 11
Narrow widths: Up to 3 in. wide add 300 per cent. Do. 3-6 in. do. 200 per cent. Do. 6-12 in., add 75 per cent.		
Labours: Arris 5½d. Fair edge 6½d. Quirk 10d.		
Plaster Moulded Cornices : 6 in. girth and under ...	Ft. run	3 1
Over 6 in. girth, add 3½d. per in.		
Tyrolean Rendering on and including Portland Cement and Sand backing	yd. sup.	12 8
Wall Tiling: 6 in. x 6 in. white glazed ¼ in. thick ...	,,	45 0
Extra for rounded angle or birdsbeak	Ft. run	4
do. rounded edge tile	,,	5

GLAZIER

	Wood sashes with beads or putty
Clear sheet glass ordinary quality :	s. d.
18 oz.	1 4½
24 oz.	1 7
26 oz.	1 9½
32 oz.	2 2
Obscured glass :	
⅛ in. Figured rolled White group 1	1 9
,, ,, ,, group 2	2 0¾
,, ,, Standard tints	2 6¾
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and luminating group 3	2 2½
¼ in. Wired Cast	2 6
¼ in. Georgian Wired Cast	2 6¼
¼ in. Polished Plate Glass, G.G. Quality :	
In plates not exceeding 2 ft. sup.	6 8½
,, ,, ,, 5 ft. sup.	7 8½
,, ,, ,, 45 ft. sup.	8 10½
,, ,, ,, 100 ft. sup.	9 5¼
Extra on all above :	
For glazing with screw beads ft. sup. ... ... (Excepting polished plate over 12 ft. super on which no extra is charged)	5½
For glazing with metal sashes with putty	1
Glazing bedded in washleather ... ... Ft. run	8½

PAINTER

		s. d.
Limewhiting : Prepare and two coats on brick ...	Yd. sup.	1 2
Whitening : Prepare and two coats on plaster ...	,,	1 5
Washable distemper: Prepare and two coats on plaster ...	,,	1 11
Emulsion paints: Prepare and two coats on plaster ...	,,	3 1

Painting with oil colours :	Yd. super 1 coat	2 coats	3 coats
	s. d.	s. d.	s. d.
Prepare and paint on plaster	2 3	4 3	6 4
On Steel :			
Plain surfaces	1 10	3 7	5 5
Roof trusses...	2 4	4 7	6 11
Metal casements divided into squares ...	3 4	6 8	10 0
do. divided into large squares ...	2 7	5 0	7 6
Opening edges ... ... Each	8	1 3	1 10
Small pipe ... ... Yd. run	6	1 0	1 5
Rainwater pipe ... ... ,,	1 0	1 11	2 9
Gutter ... ... ,,	1 4	2 6	3 8

	Knot prime and stop	*Add for each extra coat*
On Woodwork :	s. d.	s. d.
General surfaces ... ... Yd. sup.	2 10	2 3
On work not exceeding 3 in. girth ... Yd. run	4½	3½
Add to last for every additional 3 in. in girth	3¼	2¾
Sash squares on one side ... ... Doz.	5 6	4 6
Large ,, ,, ,, ... ,,	8 6	8 0
Opening edges ... ... No.	9	8

		s. d.
Oiling Hardwood : Two coats with linseed oil... ...	Yd. sup.	1 4
Creosote : Two coats on woodwork	,,	1 7
Polishing—New Work :		
Staining and wax polishing hardwood	Ft. sup.	1 1
Staining, bodying in and full french polishing on hardwood	,,	2 6
Old Work previously polished :		
Preparing old work and repolishing	,,	1 2
Stripping, preparing and repolishing	,,	3 1
Papering :		
Preparing, sizing and hanging lining paper	per piece	10 7
do. do. Wallpaper, p.c. 10s.	,,	19 8

FULL HOUSE AT GKN'SWAY

January 9th 1961 is the first night of a new show in Kingsway. On that date G.K.N Reinforcements Ltd. join many other Group Companies (and the new Royalty Theatre*) in their new building GKN House. Steel, in a great variety of roles, is the main attraction in the casts of these companies, whose combined resources enable G.K.N. Reinforcements Ltd., to present an all-star billing. You can be sure of the best performance for *your* benefit.

If you want to put steel into concrete get in touch with

G.K.N. Reinforcements Ltd.

(Formerly Twisteel Reinforcement Ltd.)

22 KINGSWAY, LONDON, W.C.2. TELEPHONE: CHANCERY 1616

* Sorry about that hat but, well—you know how difficult it is for *some* people to find their way around a new building . . .

THE BUILDER CURRENT PRICES

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling costs involved. It is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	5	5
Pit Sand	,,	1	3	8
Washed Sand	,,	1	6	9
¼ in. Shingle	,,	1	4	3
¼ in. Broken Brick	,,	1	0	9
Pan Breeze	,,	1	0	6
Fine or Coarse Foamed Slag Aggregate (2 yds. of fine and 2.6 yds. of coarse per ton.	per ton	3	8	0

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	per ton	5	10	0
1 to 6 tons, site	,,	6	2	0
Rapid-Hardening Cement in 6-ton loads and upwards to site	,,	6	0	6
1 to 6 tons do. site	,,	6	12	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Sulphate Resisting Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colocrete in 6-ton lots	,,	8	10	0
Other colours according to colour. In 4-ton lots from 308s. 0d. to 778s. 0d. per ton.				
White Portland Cement	,,	13	15	6
Under 1 ton	per cwt.		16	9
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	7	2	6
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £11 8s. 0d. to £14 3s. 0d. (1-ton loads and upwards.)				
Ciment Fondu and Lightning Brands High Aluminous cement, 6-ton lots and up	,,	15	14	6
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6	19	0
Stourbridge Fireclay, 6-ton loads (London sites)	,,	7	7	0
Moler Mortar Powder for Flue Bricks (London sites)	per cwt.	1	10	0

BRICKS

Full Loads.

		£	s.	d.
First Hard Stocks	per 1,000	16	19	6
Second Hard Stocks	,,	14	13	6
Mild Stocks (Kiln Burnt)	,,	10	15	0
Mild Stocks	,,	10	10	0
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C. district :				
Commons	,,	6	12	0
Cellular Commons	,,	6	12	0
Keyed do.	,,	6	14	0
Rustics	,,	8	12	0
Cellular Rustics	,,	8	12	0
Single Bullnose Commons	,,	8	14	6
Sandfaced	,,	9	12	0
Tuscans	,,	10	7	0
Saxons	,,	10	15	0
Golden Buffs	,,	11	2	0
Dapple Light Facings	,,	11	9	6
Heather Facings	,,	11	5	0
Best Blue Pressed Staffs (London sites)	,,	33	4	9
do. Bullnose (London sites)	,,	34	3	9
Blue Wire Cuts (London sites)	,,	29	9	6
Midhurst Lime Bricks (London sites)	,,	11	0	6
Uxbridge Whites (London sites)	,,	11	3	6
Special Purpose Sandlime Bricks (London sites)	,,	8	12	0
Best Stourbridge Fire Bricks :				
2½ in. (London stations)	,,	30	12	3
2½ in. (London sites)	,,	31	1	0
3 in. (London stations)	per 1,000	36	14	9
3 in. (London sites)	,,	37	5	3
2⅞ in. Moler Flue Bricks (London sites)	,,	31	10	0
2⅛ in. Machine-made Sandfaced Red Facings (London sites)	,,	18	16	6
2⅛ in. Machine-made Multi Red Facings (London sites)	,,	19	1	6
2⅛ in. Hand-made Sandfaced Red Facings (London sites)	,,	19	15	0
2⅛ in. Hand-made Sandfaced Multi-Colour Facings (London sites)	,,	19	15	0
Hand-made Sandfaced Cherry Red Facings, Berkshire district (London sites)	,,	20	15	0
Hand-made Sandfaced Multi-Colour Facings, Berkshire district (London sites)	,,	20	15	0
Rubber Bricks for gauged arches (London sites)	,,	51	5	0
2⅛ in. Surrey Clamp Burnt Multi Stock Facings (London sites)	,,	15	16	6
2⅛ in. Surrey Kiln Burnt Multi Stock Facings (London sites)	,,	17	7	0
Glazed Bricks (London sites), White, Ivory, Brown:				
Stretchers	,,	64	0	0
Headers	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats	,,	80	0	0
Double Stretchers	,,	85	0	0
Double Headers	,,	77	10	0
One side and two ends	,,	87	0	0
Two sides and one end	,,	89	10	0
Splays and Squints	,,	83	0	0
Cream and Buff, £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 40% for Best quality and plus 40% less 10% for Second quality.				

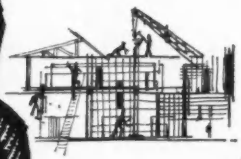
PARTITION SLABS, etc.

Delivered Central London Area. (W.C. District.)

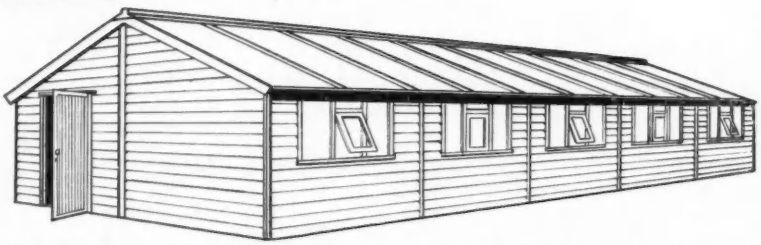
		£	s.	d.
HOLLOW CLAY PARTITION BLOCKS (Keyed) Minimum lorry loads				
*2½ in. 140 yds.	per yd. sup.		4	7
BUILDING BLOCKS (Keyed)				
*3 in. (6 cavity) 110 yds.	,,		5	9
*4 in. (6 cavity) 90 yds.	,,		7	3
6 in. (8⅝ in. × 5⅛ in.) 1,250 blocks	per 1,000	28	9	0
* Half blocks at no extra charge.				
CLINKER CONCRETE				
2 in. 100 yds.	per yd. sup.		3	11
2½ in. 85 yds.	,,		4	6
3 in. 75 yds.	,,		5	6
4 in. 55 yds.	,,		6	11
CRANHAM TERRA COTTA				
2 in.	,,		6	9
2½ in.	,,		7	9
3 in. Load bearing quality	,,		8	9
4 in. do. do.	,,		10	9
MOLER PARTITION BLOCKS				
2 in. 150 yds.	,,		11	3
2½ in. 120 yds.	,,		14	0
3 in. 100 yds.	,,		15	0
4 in. 90 yds.	,,		17	0
LIGHTWEIGHT CONCRETE BUILDING AND PARTITION BLOCKS OF VARIOUS SOURCES OF MANUFACTURE				
2 in. 100 yds.	per yd. sup.		5	4
2½ in. 80 yds.	,,		6	5
3 in. 65 yds.	,,		7	5
4 in. 50 yds.	,,		9	4
4½ in. 44 yds.	,,		10	2
6 in. 33 yds.	,,		13	5
THERMALITE-YTONG PARTITION BLOCKS				
2½ in. 144 yds.	,,		7	0
THERMALITE-YTONG LOAD-BEARING INSULATING BLOCKS				
3 in. 120 yds.	per yd. sup.		8	5
4 in. 90 yds.	,,		11	0
5 in. 72 yds.	,,		13	9
6 in. 60 yds.	,,		16	6
8½ in. 42 yds.	,,	1	3	8
FLOOR BLOCKS AND FILLER TILES				
Floor Blocks 12 in. × 12 in. delivered in full lorry-loads:				
3 in.	per 1,000	35	14	0
4 in.	,,	38	9	0
5 in.	,,	46	1	0
6 in.	,,	52	12	0
7 in.	,,	64	12	0
8 in.	,,	75	9	0
9 in.	,,	83	2	0
10 in.	,,	92	0	0
Filler Tiles in multiples of 10 tiles per 1,000 multiples:				
12 in. × 3 in. × ⅝ in.	,,	43	13	0
12 in. × 4 in. × ¾ in.	,,	75	7	0
10 in. × 5 in. × ⅝ in.	,,	75	7	0

site buildings right away

Phone **WERNICKS**



LONDON: LANGHAM 4847/9
WOLVERHAMPTON: 25028/9
BILLERICAY: 1661/2



When site buildings are required urgently a telephone call to Wernicks will bring immediate delivery of the exact type of building you need. No fuss! No delay! Lowest prices!

OR WRITE 64/66 Oxford Street, London, W.1
Dept. 94, Waterloo Road, Wolverhampton. Dept. 94, 108 High Street, Billericay, Essex

ANNOUNCING...

SPECIFY Leca NOW!

IN PRODUCTION AGAIN EARLY 1961

Leca (Great Britain) Ltd., Mill Lane, High Ongar, Essex. Tel: Ongar 2048

STONEWARE DRAIN PIPES, etc.

Glazed Stoneware Standard List (November, 1956).

		4 in.	6 in.	9 in.
Pipes, 2 ft. lengths	per ft.	1/8	2/6	4/6
Bends	each	5/–	7/6	20/3
Junctions	,,	8/4	12/6	27/–
Gullies with 4 in. outlets	,,	12/6	13/9	22/6

The following are the percentages to be added to the Standard List (November, 1956) prices delivered London Area.
Delivered ex Merchants Wharf or Depot.

	Over 2 tons	Over 100 pieces Under 2 tons	Under 100 pieces Under 2 tons
Best Quality ...	−5%	+15%	+20%
BSS Best Quality ...	+10% −5%	+10% + 15%	+10% +20%
Tested Quality ...	+37½% −5%	+37½% + 15%	+37½% +20%
BSS Tested Quality...	+47½% −5%	+47½% + 15%	+47½% +20%

		£ s. d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	12 10 6
4 in. do. do.	,,	16 16 0
6 in. do. do.	,,	34 10 0
9 in. do. do.	,,	64 19 0

DAMP COURSE

		£ s. d.
Hessian base bitumen 7 lb. per yd. sup. in 24 ft. rolls cut to wall widths in lots of £6 value and over delivered London area	per yd. sup.	3 5
Asbestos base do. 7 lb. per yd. sup.	do. do. ,,	5 2
Lead lined bitumen do. 9½ lb. per yd. sup.	do. do. ,,	12 2
18 in. × 9 in. British damp course slates	per 1,000	43 8 11
14 in. × 9 in. do. do.	,,	32 8 2
9 in. × 9 in. do. do.	,,	18 18 9
18 in. × 4½ in. do. do.	,,	19 19 9
14 in. × 4½ in. do. do.	,,	15 18 3
9 in. × 4½ in. do. do.	,,	10 14 3

STONE

		£ s. d.
Bath Stone		
Monks Park	per ft. cube	10 3
St. Aldhelm Box Ground	,,	11 6
Delivered in railway trucks at South Lambeth B.R. Western Region.		
Doulting Stone Random Blocks. Delivered London area	,,	10 10
Beer Stone. Delivered London area	,,	10 6
Portland Stone—		
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	,,	9 10
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.		
9 in. × 3 in. Rubbed, weathered, throated and stolled cills	per ft. cube	4 5 10
12 in. × 6 in. do. do. do.	,,	3 1 2
12 in. × 3 in. Plain coping, twice throated	,,	2 7 6
12 in. × 3 in. Weathered and twice throated coping	,,	3 3 3
14 in. × 6 in. do. do. do.	,,	2 17 0
4½ in. × 9 in. Plinth rubbed on top and face ...	,,	2 11 0
3 in. sawn two sides Slabs, random sizes ...	per ft. sup.	9 1
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1 11 3
do. do. fair one edge for fair faced brickwork	,,	1 17 0
Hard York—		
12 in. × 2 in. Square Steps, rubbed on top and edge	per ft. run	11 0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2 18 3
12 in. × 6 in. Plain Steps, rubbed top and front	,,	2 11 0
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.	10 3
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup.	3 12 0

TILES AND PANTILES

Delivered London area by road in 6 tons or over per 1,000.

	£ s. d.
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29 19 0
Hand-made Pantiles Berkshire district	55 18 0
Hand-made Double Roman Bridgwater district ...	64 4 1
Hand-made 10½ × 6½ tiles Berkshire district	16 10 9
Machine-made 10½ × 6½ Staffordshire district	16 1 6
Hand-made Hip and Valley tiles per doz.	1 11 10
Machine-made Hip and Valley tiles do.	1 10 1
Concrete tiles 10½ × 6½	8 10 0
do. Interlocking (49S)	19 16 6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate station. Per 1,000 actual.

	£ s. d.
24 × 12	155 10 0
22 × 12	123 10 0
22 × 11	111 10 0
20 × 12	104 10 0
20 × 10	102 0 0
18 × 10	69 10 0
18 × 9	61 0 0
16 × 10	54 8 10
16 × 8	42 12 4

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

				£115 to £140
Softwood		Ex	per	
Joinery quality		Wharf	standard	£94 — £98
Carcassing quality		do.	,,	£110 0 0
1 in. Tongued and Grooved Flooring		do.	,,	£ s. d.
Hardwood				
Mahogany—	African S.E.	do.	per ft. cube	1 10 0
do.	Honduras S.E.	do.	,,	3 5 0
Oak	European S.E.	do.	,,	2 10 0
do.	Japanese S.E.	do.	,,	3 0 0
do.	English Logs sawn ...	do.	,,	2 0 0
Teak	8 in. average S.E. ...	do.	,,	3 17 6
Walnut	African Logs sawn ...	do.	,,	1 2 6
Plywood				
6 mm. (¼ in.) Birch Plywood B/BB			per 100 sq. ft.	4 4 6
6 mm. Israeli Gaboon do. B/BB exterior grade WBP (AX100)			,, ,,	4 5 3
18 mm. Birch Blockboard			,, ,,	9 10 0
¾ in. Douglas Fir Plywood 96 in. × 48 in. Exterior grade WBP (AX100) solid two sides			,, ,,	9 11 0

DOORS (in Lots I–II)

Delivered London area.

	£ s. d.
1⅜ in. 4 Horizontal Panel. Pattern 4 in. deal	
2 ft. 0 in. × 6 ft. 6 in.	each 1 16 0
2 ft. 3 in. × 6 ft. 6 in.	,, 1 17 6
2 ft. 6 in. × 6 ft. 6 in.	,, 1 18 6
2 ft. 9 in. × 6 ft. 6 in.	,, 2 0 6
2 in. do. but top panel open. Pattern 4 × G in deal	
2 ft. 6 in. × 6 ft. 6 in.	,, 2 9 0
2 ft. 9 in. × 6 ft. 6 in.	,, 2 11 6
2 in. 2 Panel top panel open. Pattern 2 × G in deal	
2 ft. 6 in. × 6 ft. 6 in.	,, 2 3 0
2 ft. 9 in. × 6 ft. 6 in.	,, 2 5 0
1⅜ in. Plywood Faced Flush Doors to BS 459, Part 2A	
2 ft. 0 in. × 6 ft. 0 in.	,, 1 12 3
2 ft. 0 in. × 6 ft. 6 in.	,, 1 12 3
2 ft. 3 in. × 6 ft. 6 in.	,, 1 13 9
2 ft. 6 in. × 6 ft. 6 in.	,, 1 15 3
2 ft. 9 in. × 6 ft. 6 in.	,, 1 18 0
1⅜ in. Hardboard Faced Flush Doors.	
2 ft. 0 in. × 6 ft. 0 in.	,, 1 5 6
2 ft. 0 in. × 6 ft. 6 in.	,, 1 6 0
2 ft. 3 in. × 6 ft. 6 in.	,, 1 6 6
2 ft. 6 in. × 6 ft. 6 in.	,, 1 8 6
2 ft. 9 in. × 6 ft. 6 in.	,, 1 9 6

SUNDRIES

Delivered London area.

		£ s. d.
1 in. Wood Wool Slabs 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.	6 2
1½ in. do. (67 yds. to 1 ton)	,,	8 0
2 in. do. (52 yds. to 1 ton)	,,	9 9½
2½ in. do. (45 yds. to 1 ton)	,,	11 3
3 in. do. (39 yds. to 1 ton)	,,	12 7½
Quantities under 1 ton add 1d. per ¼ in. of thickness.		
¼ in. imported or home produced insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2 2 6
¼ in. Hardboard do.	,,	1 17 6
7/16 in. do. do.	,,	2 4 6
2 in. Compressed Straw Slabs, roofing quality. 6 ft., 8 ft., 9 ft., 10 ft. and 12 ft. × 4 ft.		
50–100 yds.	per yd. sup.	11 4
101–250 yds.	,,	10 10
251–750 yds.	,,	10 1
Over 750 yds.	,,	9 4
2 in. do. for partitions 4d. per yd. cheaper.		
1/16 in. Asbestos Flat Building Sheets...	,,	4 3½
⅛ in. do. do. do.	,,	6 0
Roofing Felt 1-ply	,,	1 9
do. 2-ply	,,	2 2½
Best Scotch Glue in slabs	per ½ cwt.	5 8 0
do. pearl	,,	5 8 0
Croid Glue	28 lb.	2 6 0
Impact Adhesive	per gall.	2 12 0
Cut Nails 3 in. (1-ton lots)	per ton	81 10 0
do. 4 in. and up (1-ton lots)	,,	78 0 0
Wire Nails 3 in. (4-cwt. lots)	per cwt.	3 19 2
do. 4 in. and up (4-cwt. lots)	,,	3 16 6

METALS

STEEL JOISTS, ETC.

		£ s. d.
Basis Joists—		
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in., 12 in. × 6 in., plain cut to lengths delivered London area	per ton	17 15 0
Extra for sizes		
3 in. × 1½ in. 4 in. × 1½ in.	,,	3 10 0
3 in. × 3 in.	,,	2 10 0
4 in. × 3 in.	,,	2 5 0
10 in. × 4½ in.	,,	1 10 0
5 in. × 2½ in. 5 in. × 3 in.	,,	1 15 0
4½ in. × 1½ in.	,,	3 5 0
5 in. × 4½ in. 7 in. × 3½ in. 13 in. × 5 in. ...	,,	15 0
6 in. × 3 in. 24 in. × 7½ in.	,,	2 0 0
6 in. × 4½ in. 7 in. × 4 in. 8 in. × 4 in.	,,	1 5 0
9 in. × 4 in. 10 in. × 5 in.		
12 in. × 5 in. 22 in. × 7 in.	,,	1 0 0

METALS—*continued*

		£	s.	d.
9 in. × 7 in. 10 in. × 8 in. 12 in. × 8 in.				
14 in. × 5½ in. 14 in. × 6 in. 14 in. × 8 in.	„		10	0
15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in.				
16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in.	per ton		10	0
18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in.				
Steel angles average price	„	48	15	0
Steel tees average price	„	49	15	0
Fabricated work delivered London—				
R.S. Joists cut and fitted	„	64	15	0
Compound girders	„	69	5	0
Stanchions	„	74	15	0
Compound stanchions	„	79	5	0
In Roof Work—Trusses and Purlins	„	89	10	0
Average prices not for awkward work.				
Angle cleats and ⅜ in., ½ in. and ⅝ in. bolts average price London area	per cwt.	5	10	0

Ferro-Concrete Bars and Fabric

Mild Steel Ferro-Concrete Bars British manufacture to BSS 785 ex. Mills. 1 in. diameter and upwards delivered nearest London station ...	per ton	40	10	0
do. do. ex. London Stock do. delivered London site	„	49	10	0
Extras—				
¼ in. diam.	per ton extra	8	12	6
⅜ in. do.	„	6	12	6
½ in. do.	„	4	12	6
⅝ in. do.	„	3	2	6
¾ in. do.	„	1	10	0
⅞ in. and 1 in. diam.	„		15	0
Steel wire mesh reinforcing fabric to BSS 1221A.				
Ref. No. 106 ... ... 7.88 lbs.	per sq. yd.		5	1½
„ „ 109 ... ... 4.71 „	„		3	0½
„ „ 113 ... ... 1.83 „	„		1	8½
„ „ 122 ... ... 7.32 „	„		4	9½
„ „ 125 ... ... 4.32 „	„		2	10

Mild Steel Tubes

Tubes to BSS 1387. Fittings BSS 1740.

Basic List Prices

		¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Tubes	per ft.	9½	10	1/–	1/2½	1/9	2/3	2/8	2/9
Bends	each	1/7	1/9	2/–	2/6	3/8	5/5	6/2	10/7
Elbows, square	„	1/8	1/10	2/2	2/6	3/–	4/4	5/2	8/6
do. round ...	„	1/10	2/–	2/4	2/10	3/4	4/8	5/8	9/4
Tees	„	2/–	2/2	2/6	3/2	3/8	5/–	6/2	10/2
Crosses... ...	„	4/4	4/8	5/6	6/6	8/2	11/–	13/2	21/–
Sockets, Plain	„	6	6	8	10	1/–	1/4	1/9	2/6
do. Diminished	„	8	10	1/–	1/2	1/6	2/–	2/8	4/–
Backnuts ...	„	4	4	6	7	10	1/–	1/4	2/2

Malleable Fittings

		¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Elbows, round	each	8½	8½	9½	1/2½	1/8½	2/7½	3/6	5/–
Tees	„	9½	9½	1/–	1/4½	2/–	2/9½	4/–	5/6
Crosses... ...	„	1/2½	1/2½	1/4½	2/–	2/9½	3/7½	5/2½	7/2½
Sockets... ...	„	5½	5½	7	9½	1/–	1/7½	2/2½	3/1½
Backnuts ...	„	3	3	3½	4½	5½	7½	10½	1/5½

Discounts from List prices as follows :—

Galvanised Tube—	Under 1 ton	Over 1 ton	W.I. Fittings	Malleable Fittings
Light	−39½%	−41 %	Light −26½%	Malleable List
Medium	−35½%	−37 %	Heavy −22½%	−18½%+40%
Heavy	−27½%	−29½%		
Black—				
Light	−50 %	−51½%	Light −32½%	Malleable List
Medium	−46 %	−47½%	Heavy −28½%	−18½%
Heavy	−38½%	−40 %		

C.I. Half-Round Gutters

Delivered London per yd. in 6 ft. lengths.

	Gutters	Nozzles	Stop Ends
3 in.	4/0½	3/7	1/–
3½ in.	4/4½	3/11	1/–
4 in.	5/8	4/5	1/7
4½ in.	6/3	4/11	1/10
5 in.	6/11½	5/4	2/2

C.I.O.G. Gutters

Per yd. in 6-ft. lengths :	Gutters	Nozzle	Stop Ends
3 in.	5/2½	4/8	1/3
3½ in.	5/10	4/8	1/7
4 in.	6/5	4/11	1/10
4½ in.	6/11½	5/8	2/2
5 in.	7/7½	6/5	2/6

C.I. Rain-Water Pipes

	Pipe	Bends	Branches
2 in.	8/7½	4/5	6/4
2½ in.	8/7½	4/11	8/6
3 in.	9/8½	6/2	9/2
3½ in.	11/0½	7/3	11/–
4 in.	12/9	8/9	13/1

L.C.C. Coated Soil Pipes

2 in.	9/8½	7/7	9/2
2½ in.	10/4	8/5	11/5
3 in.	11/7	9/2	13/7
3½ in.	12/11½	11/5	15/10
4 in.	14/9	12/9	18/8

Above prices for gutters, rain-water and soil pipes for under 5-cwt. lots. only. Lots over 5 cwt. see List No. 3300, dated February 1, 1955, plus 25% and tonnage allowance. 4-ton lots 5%, 2-ton lots 2½%.

L.C.C. Coated Drain Pipes

		£	s.	d.
4 in. diameter in 9 ft. lengths	per yd. run	1	15	3
6 in. do. do	„	2	11	7
4 in. diameter bends	each	1	3	9
6 in. do.	„	3	3	9
4 in. diameter branches	„	2	2	0
6 in. do.	„	5	1	0

Pitch Fibre Drain Pipes

		£	s.	d.
2 in. diameter in 5 ft., 5 ft. 6 in. or 8 ft. lengths including couplings	per ft. run		1	6½
3 in. do.	„		1	10½
4 in. do.	„		2	6
5 in. do.	„		4	1½
6 in. do.	„		5	0½
4 in. diameter short radius ¼ bends	each		17	9
4 in. do. do. ⅛ bends	„		12	11
2 in. diameter 6 ft. radius bends (5 ft. lengths)	„		16	2
3 in. do. do. do.	„		19	8
4 in. do. do. do.	„	1	7	4
5 in. do. do. do.	„	2	4	0
6 in. do. do. do.	„	2	14	6

Above prices for loads of £60 and over.
Loads £25 to £59 19s. 11d. Plus 10%
Loads under £25 plus 15%

Asbestos Rain-Water Pipes and Fittings

All less 17½% discount.		2 in.	2½ in.	3 in.	4 in.
Pipes, 6-ft. lengths ...	per yd.	4/7	4/10½	5/11	7/10
Shoes	each	3/–	3/3	3/10	5/2
Single Branches	„	4/8	5/6	6/7	9/2
Bends, square or obtuse ...	„	3/3	3/7	4/8	6/7
Swan Necks, 4½ in. proj....	„	3/7	4/8	5/2	7/3
do. 6 in do....	„	3/10	5/2	5/10	7/10

Asbestos O.G. Gutters and Fittings

		4 in.	4½ in.	5 in.	6 in.
Gutters, 6-ft. lengths ...	per yd.	4/4	4/9½	5/9	6/10½
Drop ends	each	3/6	4/–	4/9	5/5
Stop ends	„	1/1	1/2	1/3	1/5
Angles	„	3/7	4/1	5/–	5/10
Nozzles	„	3/6	4/–	4/9	5/–
Union Clips	„	1/9	2/1	2/6	2/11

Asbestos Half-Round Gutters and Fitting

	per	3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters, 6-ft. lengths	yd.	3/0½	3/7½	3/8½	4/4½	6/1
Drop ends	each	2/6	3/–	3/3	3/7	5/2
Stop ends	„	1/–	1/1	1/2	1/3	1/5
Angles	„	2/10	3/3	3/7	3/10	5/2
Nozzles	„	2/6	3/–	3/3	3/7	5/2
Union Clips	„	1/3	1/4	1/5	1/7	2/5

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	52 17 6
Mild Steel Bars	47 8 6
Mild Steel Hoops	49 0 0

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	62 7 6
24 gauge	64 17 6
26 gauge	67 17 6
Galvanised Corrugated Sheets, 6-ft. to 9-ft. —	
20 gauge	70 18 0
24 gauge	74 8 0
26 gauge	79 13 0
Galvanised Flat Sheets C.R. and C.A. :	
20 gauge	72 8 0
24 gauge	75 18 0
26 gauge	81 3 0

ALUMINIUM AND ALUMINIUM ALLOYS

(Base Prices)		£	s.	d.
Sheet BS 1740 S1C 18 SWG (36 in. wide)... ...	per lb.		3	0
Sheet BS 1470 NS3 Utility 18 SWG (36 in. wide)	„		2	11
Coiled strip BS 1470 S1C 18 SWG (24 in. wide)	„		2	11
Coiled strip BS 1470 NS3 Utility 18 SWG (24 in. wide)	„		2	10½
Coiled strip for flashing, high purity, 22 SWG (12 in. wide)	„		3	1½
Corrugated sheet BS 1470 NS3 Circular Profile 8 ft. × 32 in. × 20 SWG	per sheet	1	13	6
Corrugated sheet BS 1470 NS3 Industrial Profile 8 ft. × 31¼ in. × 20 SWG	„	1	19	3
Corrugated sheet BS 1470 NS3 Mansard Profile 8 ft. × 31¼ in. × 20 SWG	„	1	12	7
Extruded section BS 1476 E1C simple moulding	per lb.		2	10
Extruded section BS 1476 E1C 1 in. diam. round	„		2	7½
Extruded section BS 1476 HE10WP simple angle	„		3	1½
Extruded section BS 1476 HE10WP 1 in. diam. round	„		3	0½
Tubing BS 1471 T1C 1½ in. O/D × 20 SWG ...	„		6	6½
Tubing BS 1471 HT19WP 1½ in. O/D × 20 SWG	„		4	0½

PLUMBERS' BRASS WORK, etc.

Delivered in London area.

All per dozen	B.S.S. ½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron...	87/–	128/–	—	—	—	—
Toilet bib cocks for iron ...	109/–	158/5	—	—	—	—

PLUMBERS' BRASS WORK, etc.—*continued*

All per dozen	¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown stop cocks for iron	66/-	95/9	188/-	363/-	522/6	917/6
do. with two unions for lead	89/-	132/-	234/4	472/-	623/6	1,389/6
Double nut boiler screws ...	18/8	26/5	47/6	48/6	67/-	93/6
Heavy Croydon ball valves...	77/-	193/6	312/5	568/8	734/10	—
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6	165/-
	1½ in.	1¾ in.	2 in.	3 in.	3½ in.	4 in.
Caps and Screws	33/-	40/8	59/6	92/5	118/10	155/3
Brass Sleeves	—	31/11	31/11	56/2	74/10	91/5
	1½×6 lb.	1½×6 lb.	2×7 lb.	3×7 lb.		
Lead P. trap with brass cleaning screws	68/6	85/6	137/-	233/9		
Lead S. trap do. do.	82/9	102/9	168/3	302/3		

Solder :			s.	d.
Plumbers' ...	1 cwt. lots	320/-	14 lb. lots per lb.	3	7
Tinmen's	„ „	404/-	„ „ „	4	5
Blow pipe ...	„ „	407/-	„ „ „	4	6

Copper Tubes and Sheets

Copper tubes BSS 659/1944 on the basic price of 26½d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 10 cwt.

	Extra d.	Total per lb. d.	Approx. per ft. d.
¼ in. × 19 gauge	15½	42½	11½
⅜ in. × 19 „	13½	40½	15½
1 in. × 18 „	12½	38⅝	24½
1¼ in. × 18 „	11½	38½	29
1½ in. × 18 „	11½	38½	34⅜
2 in. × 17 „	13½	39⅝	55½

Small Quantity extras :—
10 cwts. to 5 cwts. ... ... plus ½d. per lb.
5 cwts. to 2 cwts. ... ... „ 1d. „
2 cwts. to 1 cwt. ... ... „ 2d. „

	£	s.	d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	261	0	0

Zinc

		£	s.	d.
Sheet Zinc, 10 gauge (25 SWG), 5 cwt. lots upwards	per cwt.	7	15	3
„ „ 12 gauge (23 SWG), „ „ „	„	7	14	9
„ „ 14 gauge (21 SWG), „ „ „	„	7	13	6

Brass Tube

Brass tubes, basic price, plus gauge and manufacturing extras	per lb.	1	10	

LEAD SHEET AND PIPES

Basis selling price to one address in London or Home Counties :

		£	s.	d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	101	15	0
„ Water Pipe, in coils	„	104	0	0
Lead Soil Pipe, 10 ft. or over 2 in. to 4 in. in dia.	„	105	10	0
„ „ „ over 4 in. dia....	„	107	10	0
„ Gas or Untinned Compo pipe...	„	105	10	0

5 cwt. lots and over less 6d. per cwt. off basic prices.

Extras over Basis for quantities under 5 cwt.:

3 cwt. and under 5 cwt.	per cwt.		4	0
1 cwt. do. 3 cwt.	„		6	0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected, £56 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£	s.	d.
Coarse Pink in 1-ton loads and over delivered on site	per ton	8	4	6
do. White do. do.	„	8	14	0
Sirapite Coarse BSS 1191 Class C do.	„	8	15	9
do. Fine do. do.	„	9	3	3
do. Browning BSS 1191 Class B do.	„	8	15	9
do. Board Finish do.	„	8	15	9
Blue Lias Lime, in 6-ton loads	„	6	14	6
Hydrated Lime (Grey), in 6-ton loads	„	5	10	0
do. (White) do.	„	6	0	0
Lump Lime (Grey) do.	„	5	7	0
do. (White) do.	„	5	14	6
White Keen's or Parian Cement, in 1-ton loads...	„	11	19	3
Pink Keen's or Parian Cement, in 1-ton loads ...	„	11	14	0
Granite Chips, in 6-ton loads	„	2	5	3
Hair	per cwt.	4	17	6
Gypsum Plaster Lath or Base Board, ⅜ in. thick, 600 yds. and over in one delivery. Delivered site	per yd.	2	2½	
1,200 yds.	„	2	1½	
do. Insulating do. ½ in. thick, 600 yds. and over in one delivery. Delivered site	„	2	8	
1,200 yds.	„	2	7	
Gypsum Plaster Wall Boards, 3 and 4 ft. wide 6 to 12 ft., ⅜ in. thick, 600 yds, and over in one delivery. Delivered site	„	2	5½	
1,200 yds.	„	2	4½	
do. Insulating do. ½ in. thick, 600 yds. and over in one delivery. Delivered site	„	2	11	
1,200 yds.		2	10	

PAINTS AND DISTEMPER

Delivered London area.		£	s.	d.
Ceiling Distemper	per cwt.	1	7	6
Washable Distemper	„	5	15	0
Gloss Paint	per gal.	2	16	0
Super Snowcem cement paint (in 1 cwt. drums) ...	per cwt.	4	0	0

Lead Products and Oils

		£	s.	d.
Ground White Lead, in 1 cwt. kegs	per cwt.	8	7	6
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins	per gal.	3	6	6
Genuine Red Lead, Dry, 1 cwt. keg (10 ton lots)	per cwt.	5	12	6
do. do. do. (1 cwt. lots)	„	6	19	0
Genuine Linseed Oil Putty, 1 cwt. keg	„	2	13	6
Size XD quality 28 lb.	per tin		9	0
Raw Linseed Oil (5 gal.) drums extra	per gal.		19	2
Boiled Linseed Oil (5 gal.) do.	„	1	0	0

Sundries

Turpentine substitute (5 gal.) drums extra... ...	„		5	4½
do. do. (40 gal.) do.	„		4	8½
Solignum, Brown (5 gal. cans) Exterior	„		8	8
Creosote (40 gal. barrels)	„		2	3
Paste Powder (1 lb. packets)	per lb.		2	4
White Lining Paper	per piece		1	2

VARNISHES, etc.

Delivered London area.		£	s.	d.
Oak Varnish, Outside or Inside	per gal.	2	0	0
Oal Pale Copal do. do.	„	2	0	0
Hard Drying Oak for Inside	„	2	5	0
Crystal Paper Varnish do.	„	2	8	0
Eggshell Flat Varnish do.	„	2	2	0
Finest Carriage Varnish	„	2	7	0
Front Door Varnish	„	2	4	0
Japan Gold Size	„	1	12	0
Black Japan	„	1	16	0
Brunswick Black	„	1	12	0
Berlin Black	„	1	10	0
Terebene	„	1	12	0
Knotting (1 gal. bottles free)	„	1	15	0
French and Brush Polish (do.)...	„	1	15	0

GLASS

Delivered London area.		s.	d.
18 oz. Sheet Glass Ordinary Glazing Quality—Cut Sizes	per ft. sup.		9½
24 oz. do. do. do. do.	„		11½
26 oz. do. do. do. do.	„	1	2½
32 oz. do. do. do. do.	„	1	6½
¼ in. Rolled Plate	„	1	2½
7/32 in. Rolled and Rough Cast	„	1	5
½ in. do. do.	„	1	5½
¼ in. Figured Rolled and Cathedral, Standard patterns—			
White Group 1	„	1	2½
do. Group 2	„	1	8½
do. Standard Tints	„	2	1½
do. Special Tints	„	7	3
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating Group 3	„	1	7½
¼ in. Wired Cast	„	1	9½
¼ in. Georgian Wired Cast	„	1	9½

Hollow Glass Blocks—

P.B.2	Cross reeded	5⅞×5⅞×3⅝ in.	each	3	6
P.B.3	Broad reeded	7⅞×7⅞×3⅝ in.	„	5	4
P.B.32	Cross reeded	7⅞×7⅞×3⅝ in.	„	5	4
P.B.4	Prismatic	7⅞×7⅞×3⅝ in.	„	6	0
P.B.5	Flemish	7⅞×7⅞×3⅝ in.	„	5	4
P.B.6	Boomerang	7⅞×7⅞×3⅝ in.	„	6	0

Half Size Blocks—

P.B.32	Cross reeded	7⅞×3⅞×3⅝ in.	„	4	6

Radiused Corner Blocks to match up with—

P.B.2	Cross reeded	„	7	6
P.B.3	Broad reeded	„	9	0
P.B.32	Cross reeded	„	9	0

P.B.2, P.B.3, P.B.32 are also supplied in Light Diffusing Blocks at same price.

¼ in. Polished Plate Glass, G.G. quality—			
In plates not exceeding 2 ft. sup.	per ft. sup.	4	7
„ „ „ 5 ft. sup.	„	5	7
„ „ „ 45 ft. sup.	„	6	9
„ „ „ 100 ft. sup.	„	7	4
¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality—Not exceeding 135 ft. sup. or 240 in. one way or 130 in. both ways ...	„	10	9
Not exceeding 180 ft. sup. or do.	„	14	3

Plates exceeding 180 ft. sup. prices on application.

Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	per ft. sup. s.	d.
18 oz. sheet O.Q.	3,000		6½
24 oz. „ „	2,000		8½
26 oz. „ „	2,000		11
32 oz. „ „	2,000	1	2½
¼ in. Rolled Plate	1,000		10½
¼ in. Figured Rolled and Cathedral Standard Patterns, White Group 1	1,000		10½
do. Group 2	1,000	1	2
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte Group 3	1,000	1	2
7/32 in. Rolled Plate or Rough Cast	2,000	1	1
½ in. do. do.	2,000	1	1½
¼ in. Wired Cast, Hexagonal	2,000	1	4½
¼ in. Georgian Wired Cast	2,000	1	4½

THE BUILDER RATES OF WAGES

AS FROM OCTOBER 3rd., 1960. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors)

1. Craftsmen and Labourers.

Region	Craftsmen	Labourers
	s. d.	s. d.
England & Wales (Grade A) ...	4 11½	4 4
London	5 1	4 5½
Liverpool and District ...	5 1	4 5½
Scotland... ...	4 11½	4 4

2. Apprentices.

Age	Per cent. of Craft Rate	London and Liverpool Dist.	England, Wales
		s. d.	s. d.
15	25	1 3½	1 3
16	33½	1 8½	1 8
17	50	2 6½	2 5½
18	62½	3 2½	3 1½
19	75	3 9½	3 8½
20	87½	4 5½	4 4½

3. Young Male Labourers.

Age	Per cent. of Craft Rate	London and Liverpool Dist.	England, Wales and Scotland
		s. d.	s. d.
15	33½	1 6	1 5½
16	45	2 0½	1 11½
17	66⅔	2 11½	2 10½
18	100	4 5½	4 4

NORTHERN IRELAND is not included; rates fluctuate so much from district to district that reference should be made to local offices.
WATCHMEN.—The rates per shift for watchmen engaged on building sites is 27s. 3d. in London and Liverpool District, and 26s. in the provinces.
FEMALE OPERATIVES.—In all districts throughout the country except in Scotland the rate of wages for women, aged 19 and over, engaged in craft processes is 4s. 1d. per hour. Women engaged on work other than craft processes, 3s. 9d. per hour. In Scotland the rate for the woman craftsman is 4s. 4d, after a probationary period, and the woman labourer, 3s. 10d.

Building in the City

North-South Route to be Deleted from Barbican Scheme

THE COURT OF COMMON COUNCIL, sitting at the Guildhall on December 16, adopted a recommendation of a special committee that the north-south route should be left out of the redevelopment of the Barbican area. The streets committee submitted a report saying that they adhered firmly to their opinion that the retention of a north-south route directly connecting Wood-street with Golden-lane would be 'in the best interests of the traffic needs of the City.' Having regard to the over-riding interests of the City of London, however, they did not oppose the special committee's recommendation.

In their report, the special committee said they appreciated that the arguments for and against the road were nicely balanced. 'Nevertheless,' it continued, 'as a matter of policy we are now firmly of the opinion that, in the light of the views expressed to us by the Minister of Housing and Local Government and the Minister of Transport, the Barbican committee should now proceed in their reference for the redevelopment of the Barbican area leaving out the route.'

MR. T. KINGSLEY-COLLETT, chairman of the special committee, said that there was no doubt in the minds of the committee when the matter about the road was before them. Two Ministers of the Crown had said that the road was not to be retained, and the committee now felt that no useful purpose would be served by pursuing the matter any further. 'Let us not embark on any further tussles with ministries and other authorities which are bound to be unproductive and would only involve more delay,' he added.

MR. D. GORDON MILLS, chairman of the streets committee, said the more his committee studied the problem the more they were convinced that the road was essential. 'When it was planned,' he said, 'succeeding Ministers of Transport always insisted on the retention of the road. Now, for reasons completely beyond our comprehension, the road should be abandoned, according to two ministries. We are faced with a very difficult situation where we are faced with opposition by two Ministers.

'Unless we meet their requirements, the Corporation could be frustrated indefinitely in their attempts to develop the Barbican. Under the pressure of these circumstances, while we could not support this report, we cannot conscientiously oppose it. It will be permanently recorded,' concluded Mr. Mills, 'that your streets committee were blameless, and the responsibility will fall squarely on the shoulders of the Ministers.'

MR. EDWARD HOWARD said the serious aspect was the attempt by the Government to bludgeon the Court. One minister objected to the road because it would be used; the other objected because it would not be used. 'What opinion can we have of a Minister of Transport who changes his mind like this, when he wants to close down roads in the most heavily congested area in the Commonwealth? I suggest it is pure politics. I am sure there are some four-letter words to describe Mr. Marples' epistle. I ask you not to be over-awed by these ministerial menaces and to vote against it.'

SIR SIDNEY FOX said the fact that two cabinet ministers opposed it, did not preclude them from registering their objection if they felt a mistake had been made. He hoped they could convince the Minister that they were really alarmed and he might be persuaded to have second thoughts on the matter.

Office Building Rejected

The Council refused to permit the construction of a new building on a site at 13 to 17 Little Trinity-lane and part of 200 Upper Thames-street. The building was to have had a floor area of about 25,000 sq. ft. for use as offices, a freight depot and for the packing and despatch of goods in transit.

The reasons for the refusal were that the use of the building as offices would be contrary to the use-zoning proposals of the Development Plan and would be contrary also to the policy of restricting office development in the central area. The site was also adjacent to the headquarters of the fur trade and should be developed as part of a comprehensive scheme for the area as a whole for occupation by businesses associated with that trade. The architects for the scheme were Gerald Eve and Co., of Queen's-street, W1.

The Strength Properties of Timber

New Forest Products Research Bulletin

TIMBER, like all other materials of construction, has the ability to resist applied or external forces. This resistance, or strength, involves a number of specific mechanical properties and it is largely these that determine the suitability of a species for a particular purpose. A basic knowledge of the strength properties of a species of timber is therefore essential if it is to be used in an economical and efficient manner. Such knowledge is acquired chiefly from laboratory tests, carried out under controlled conditions on small specimens of timber of regular grain and free from defects.

Forest Products Research Bulletin No. 45—'The Strength Properties of Timber'—published recently (HMSO, price 3s. 6d.) describes the procedure and methods of tests on 2 in. and 2 cm. specimens, the internationally accepted standards. These were formerly published in Bulletins 28 and 34, respectively, which are now superseded. The Bulletin gives up-to-date information on the physical and mechanical properties of 172 home-grown and imported hardwoods and softwoods.

Wood Preservation

THE VERBATIM REPORT of the 1960 annual convention of the British Wood Preserving Association, held at Cambridge from July 12 to 15, is now available, price 12s. 6d., from the Association, at 6 Southampton-place, London, WC1.

TECHNICAL REVIEW

This Review of plant, equipment and materials—in most cases new or with new features—is intended to give brief details only of the products mentioned. Notices are based on data supplied by the manufacturers. Additional information and prices can be obtained either direct or by using the prepaid Readers' Service form which appears on page 148 of this issue. The form can be used for more than one inquiry.

1. Aluminium

An interesting marine structure recently completed is an aluminium SMALL CRAFT PONTOON built by Whittingham & Mitchel Ltd., for the Esso Petroleum Company's marine terminal at Milford Haven. This is the second installation of its kind. Another, though smaller pontoon, was supplied for the Fawley terminal. The main structure has in each case been of aluminium, primarily to reduce the labour and expense of frequent maintenance.

Of overall dimensions 50 ft. x 22 ft., and 5 ft. 3 in. in depth, the pontoon was fabricated in four sections and assembled on the site before lifting into place. The internal framework of part riveted and part welded construction consists generally of 3 in. x 3 in. x 5/16 in. ordinary angles, with buoyancy provided by 24 cylindrical tanks of 3 ft. 3 in. in diameter and 5 ft. in length welded from 10 swg aluminium sheet, each suspended from yokes by aluminium straps in such a way that the upthrust of the buoyancy provides an additional retaining force. Each tank has a trunked manhole for access if necessary, and has two transverse internal diaphragms.

The total weight of the pontoon, which floats at a light draught of 1 ft. 9 in., is about 17 tons, and the weight of the aluminium structure about 5 tons. The reserve buoyancy is about 20 tons.

Alcan Industries Ltd.,
Banbury, Oxfordshire

2. Jointing

A PASTE COMPOUND has been specially formulated for joining most types of aluminium alloys. The resulting joints are corrosion resistant and of high strength and require no finishing or after treatment. No filler alloy is needed and the compound is simply painted on. It is particularly suitable for fine work such as wire and cable joining, instrument parts, floats and other small fabrications.

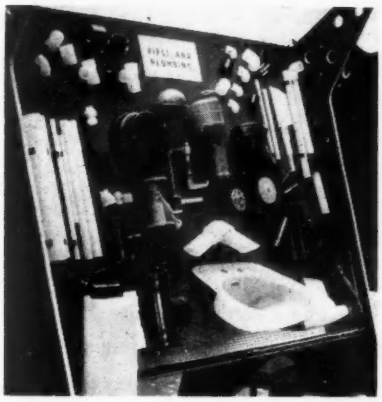
Eutectic Welding Alloys Co., Ltd.,
Faggs-rd., Feltham, Middlesex.

3. Plastics

The scope for utilising plastics has been further widened by the development of 'Propathene,' the ICI brand of polypropylene. This is an extremely LIGHTWEIGHT PLASTIC having a density of only 0.90 gm/cc and, as it melts at about 165°C, it seems suitable for a number of applications where temperatures well above the boiling point of water are used. It also possesses a high degree of rigidity and a retention of useful strength up to 140-150°C.

Polypropylene, being a hydrocarbon, has a very low moisture absorption. The new polymer has a high resistance to attack by inorganic and organic liquids and gives complete freedom from the environmental stress cracking failures sometimes observed with polythene. Of particular interest is the fact that polypropylene offers a very high resistance to oils, fats and greases and may find important applications in fields where oleaginous materials are used.

ICI, Ltd.,
Millbank, London, SW1.



At a recent exhibition, some of the applications of polypropylene in the field of plumbing were displayed

4. Panelling

An attractive WOOD PANELLING has recently been introduced into this country which is a modern treatment of one of Canada's most beautiful hardwoods, birch. Made in sheets for easy application, it is factory finished in four different shades: natural, redtrend, silvertrend and goldtrend. Each finish is protected by a furniture lacquer which is unaffected by alcohol, fruit juices, nail polishes or paint solvent.

J. Eidelman.
38 King William-st., EC4

5. Windows

The use of central heating, both in new houses and in conversions of existing houses, has resulted in the need to prevent heat loss through windows. A number of manufacturers have produced multiple-glazing units consisting of two and three sheets of glass separated by spacers and sealed to enclose dry air in an endeavour to overcome this problem.

Developing an idea that is common practice in North America, one manufacturer is now producing a RESIDENTIAL WINDOW fitted with storm sash and insect screens. This prevents the infiltration of air around the edges of the opening ventilator. The storm sash is of a new design incorporating aluminium frames with plastic cushions to give a perfect seal and to reduce noise transmission. It is easily fitted by means of simple turnbuckles. The window will be manufactured in sizes corresponding with the BS 990 range.

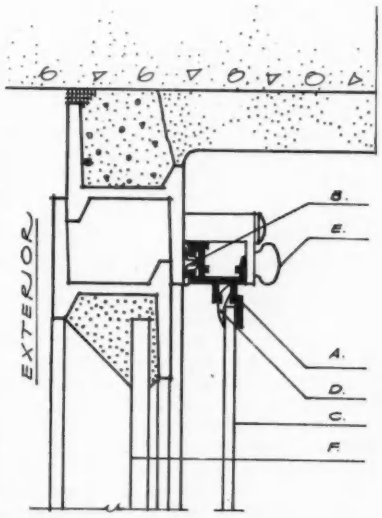
Williams & Williams Ltd.,
Reliance Works, Chester.

6. Technical Publications

(a) A handbook on rigid frame construction using Canadian fir plywood has been produced by the Plywood Manufacturers Association of British Columbia, of 4 Carmelite-street, London, EC4. The principle of rigid frame is fairly simple. Clear span timber arches with fir plywood gussets are erected on prepared foundations and quickly sheathed with 8 ft. x 4 ft. plywood panels. Three men can erect an average size rigid frame building in a day.

The plywood is permanently bonded with waterproof glue and, as the fir plywood is structurally strong, the building can stand up to extreme weather. It would also be easy to insulate.

(b) A well-made and brightly illustrated catalogue dealing with builders' hardware and ironmongery has been published by Archibald Kenrick & Sons Ltd., of West Bromwich, Staffs. It is the first comprehensive catalogue published by the company since 1926 and incorporates many improvements including a new system of numbering patterns. Some of the latest patterns noted in the publication, however, are not yet available. Details of screw holes and packs have also been recorded for the first time. Copies can be obtained from the company at the above address.



A. Storm sash frame
B. Resilient plastic cushion
C. Glass panel
D. Extruded plastic spline holding panel
E. Turnbuckle securing storm sash and applying pressure on cushion
F. Glass in primary frame

News in Brief

Building Contract Management

A COURSE of twelve post-advanced lectures on 'Building Contract Management' will be held at the Manchester College of Science and Technology, commencing on January 19. Enrolment will take place during the half-hour preceding the first lecture on January 19 when the course fee of £4 will be payable. Applications to attend should, however, be made in advance and intending students are requested to write for preliminary forms to the Registrar, Manchester College of Science and Technology, Manchester 1.

James Watt Monument

THE MONUMENT to James Watt in Westminster Abbey is being replaced by a plaster bust which has been presented to the abbey by the Institution of Mechanical Engineers. By arrangement with the British Transport Commission the monument is to be removed to the commission's museum at Clapham, SW.

Industrial Safety Awards

WINNERS from York and Hull, in the annual safety competition of the Shepherd Group of Companies received awards from the chairman and managing director, Mr. Peter M. Shepherd, at a presentation ceremony in the Merchant Taylors Hall, York, on December 20. Nearly 2,000 employees were represented in the 13 centres which took part in the competition, which along with other measures has helped to achieve one of the best accident free records in the building industry.

The Late Mr. Thomas Crompton

MR. THOMAS CROMPTON—the third generation of the same name to be associated with Thomas Crompton and Sons Ltd., of Ashton-in-Makerfield, Lancs., manufacturers and exporters of hinges, locks and builders' ironfoundry—has died at the age of 74 in Llandudno, North Wales.

The Late Mr. David Thomas Adams

WE REGRET TO RECORD the death on December 29 of Mr. David Thomas Adams, of Melrose-road, Wandsworth, London, SW18. Mr. Adams was a principal in the firm of Stevens & Adams Ltd., timber merchants, of Victoria Works, Osiers-road, Point Pleasant, Wandsworth, into whose service he entered in 1913.

Builder's 150th Year

THREE HUNDRED GUESTS attended a party held at Canterbury to mark the 150th anniversary of the founding of the building firm of John E. Wiltshier and Co., of Stour-street. Mr. Eric Wiltshier, managing director, replied to the toast of 'The Company,' proposed by Alderman S. Jennings.

Appropriation of Land for Housing

Minister's Concession to Local Authorities

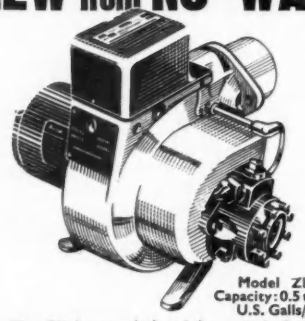
THE Minister of Housing and Local Government has sent a circular (No. 62/60) to local housing authorities in which it is stated that he has been giving consideration to the arrangements covering the appropriation to housing purposes of land acquired under Part III of the Housing Act, 1957. The circular stated:

The requirement in section 47(1)(a) of the Housing Act, 1957, that such land may be appropriated to other purposes only with the Minister's approval, has been removed by section 23(1) of the Town and Country Planning Act, 1959. As, however, section 23(2) of that Act requires the consent of the appropriate Minister to be obtained to the first appropriation of any land acquired compulsorily, the appropriation to Part V purposes of land acquired in pursuance of a compulsory purchase order made under section 43 of the Housing Act, 1957, still needs the Minister's consent. The Minister thinks, however, that it would be unnecessarily burdensome if local authorities were required to apply for formal consent in every individual case.

Accordingly, in pursuance of his powers under section 30(4) of the Town and Country Planning Act, 1959, the Minister hereby gives to every local authority any consent required from him under section 23(2) of the Town and Country Planning Act, 1959, in respect of the appropriation to the purposes of Part V of the Housing Act, 1957, of any land acquired in the exercise (directly or indirectly) of compulsory powers* under Part III of the Act, where the authority have stated, either before confirmation of the compulsory purchase order or at the time of application for loan sanction for such purchase, that they intend to use the land for purposes of Part V of the Act.

* The exercise (directly or indirectly) of compulsory powers is defined in section 30 (5) of the Town and Country Planning Act, 1959.

NEW from NU-WAY



Model ZL2
Capacity: 0.5 to 2.5
U.S. Galls/hr.

ZL2 The Oil burner designed for today's Domestic Heating Market.
ZL2 Approved and fitted by the leading boiler and airheater manufacturers.
ZL2 For the efficient conversion of existing boilers to Nu-way oil firing.
Write:

NU-WAY HEATING PLANTS LTD.
(Box. B417) DROITWICH.

Housing Progress Report

Figures for November

THE HOUSING SUMMARY presented to Parliament as a White Paper (Cmd. 1259. HMSO, price 3d.) jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during November was 25,372 compared with 25,136 in November, 1959. Of these 14,845 were built by private builders and 10,527 by public authorities.

In the first eleven months of 1960, 270,440 permanent houses were completed compared with 250,238 in the same period of 1959.

Trade News

Austins Carry On!

READERS will be glad to hear that the very serious fire at the Barking premises of Austins of East Ham Ltd., the joinery and moulding manufacturers, which has had so much publicity, was confined mostly to raw materials through the admirable efforts of the fire brigade and police, and that the Barking factories sustained little damage. The firm has notified personally all its customers that it will be able to maintain an uninterrupted service. There may be a little delay with non-standard flush doors.

Marketing Arrangement

AS FROM JANUARY 1 marketing arrangements for the 'Reguplug' will be taken over by Distribution Equipment Sales Department, AEI Cable Division, 155 Charing Cross-rd., London, WC2. The 'Reguplug' was previously handled by AEI Instrumentation Division.

The 'Reguplug' is a Simmerstat control which plugs directly into a three-pin mains socket and provides fully variable control of supply for any piece of electrical heating apparatus.

Change of Address

AS EFFECTIVE from January 1 the head office of Blaw Knox Ltd. will be located at Thorn House, Upper St. Martin's-lane, London, WC2 (telephone: Temple Bar 0381/6). The firm's open hearth equipment division will be at the Administrative Offices, Short's-way, Rochester, Kent (telephone: Chatham 41041). Service and spares will be dealt with from Bushey Mill-lane, Watford, Herts.

Price Reductions

TURNER BROTHERS ASBESTOS CO. LTD. announce further reductions in the price of their 'Duraglas' glass-fibre materials. These reductions affect both 'E' and alkali glass 'Duramat' chemically and mechanically bound glass mats, chopped rove, and a further reduction is also made to all qualities of glass rove. Reductions range from 2d. per lb. to 6d. per lb.

Company News

JOHN LAING & SON LTD. have opened regional offices in Manchester to deal with their expanding activities in the north west.

TWYFORDS LTD. have declared an interim dividend of 5 per cent (less tax), payable January 12, 1961 (same).

OVERSEAS BUILDING

From Our Own Correspondents

AUSTRALIA (NEW SOUTH WALES).—The Melbourne Harbour Trust is planning new docking facilities for large ships and cargo vessels. The chairman of the Harbour Trust Commissioners, Mr. Swanson, said today that when finance permitted there would be an entrance to the River Yarra opposite the terminal for the Bass Strait ferry, Princess of Tasmania.

CANADA (BRITISH COLUMBIA).—A new research centre is to be built for Columbia Cellulose Co. Ltd. at Prince Rupert. It will comprise pilot plants, laboratories and administrative facilities. Completion is scheduled for the summer of 1961. . . . Under consideration for the City of Vancouver is a $435m. expressway construction programme. The project, which would take over 10 years to complete, would take up part of the famous Stanley Park.

CANADA (NEWFOUNDLAND).—A large hospital, together with a nurses' training school, is to be constructed at Grand Falls.

CANADA (NOVA SCOTIA).—A $12m. highway is to be constructed around Halifax and Dartmouth.

CANADA (ONTARIO).—A school building programme, announced by the City of Hamilton, calls for 5 new schools, to cost $2m. each, and a 1$m. administration building. . . . A $10m. brewery is to be constructed in the Scarborough Township area of Metropolitan Toronto for the O'Keefe Brewing Co., Ltd.

CANADA (QUEBEC).—Construction of a sports stadium, to accommodate 80,000 spectators, has been announced in Montreal. . . . The Quebec South Shore Steel Corporation has announced the construction of a $25m. steel plant at Varennes. . . . Sir Robert McAlpine and Sons (Canada) has been awarded the contract for the construction of the new $3.5m. Bank of Nova Scotia building in Montreal. . . . Approval has been asked for the construction of a new Canadian National Railway line to Mattagami Lake in north-western Quebec.

CANADA (SASKATCHEWAN). — Kiewit-Johnson-Poole has been awarded an $8m. contract for the construction of the downstream half of the diversion system at the Saskatchewan River power project. . . . Perini Ltd. of Toronto has been awarded a $10m. contract to construct the power station at Squaw Rapids on the same project.

GUATEMALA.—The Guatemalan Social Security Institute has announced plans to erect a hospital in the southern city of Esquintla, which is rapidly becoming an important manufacturing centre under the industrial development programme of the current administration.

KENYA.—The first multi-storey, fully automatic car park of its kind in the Commonwealth is to be built in Nairobi at a cost of more than £¼m. Work on the building, which will also contain offices, shops and flats, will begin on a city centre site this month. Fourteen storeys of parking space will accommodate 300 vehicles. On three sides of the parking block there will be 8 storeys of offices, with shops on the ground floor and flats above.

RHODESIA (NORTHERN).—Work on the development of Sinazongwe as one of two harbours on Lake Kariba is reported by Barclays Bank DCO to have begun and there are prospects of an early announcement about the construction of quays, beaching hards and roads at a second site at Chipepo. Sites have been cleared for first works at Sinazongwe harbour and work has begun on a contract totalling £49,000 for erecting a reinforced concrete quay and foundations for a future extension, a concrete slipway, beaching hards with stabilised surfaces, harbour roads, mooring blocks, buoys, lights and earthworks associated with harbour approaches.

Overseas Contract Open

PAKISTAN.—The West Pakistan Water and Power Development Authority intends to invite tenders for the construction of canals and ancillary works forming part of the Indus Basin Settlement Plan. The canals will have a total length of 390 miles and involve approximately 345m. cu. yd. of excavation, as well as the construction of several hundred bridges and other structures. The work will be divided into seven or more individual projects, the first of which to be undertaken will be the Trimmu-Sidhnai Link Canal. This will extend from Trimmu on the Chenab river to near Sidhnai on the Ravi river, a total length of 44 miles. It will involve the construction of regulators, bridges, aqueducts and other structures. The second project will be the Sidhnai-Mailsi-Baliawal Link Canal (69 miles). The Authority plans to call for tenders for all or part of the first project early in 1961, and the second in mid-1961. Contractors who wish their names to be included on a list to receive the document for prequalification should write to Messrs. Tipton and Kalmbach Inc., PO Box 589, 14th Street, Denver 2, Colorado, USA, by January 16.

KEEP * * BUILDING * DESPITE * FROST * *

CEMENTONE

No. 8 frost proofer and concrete hardener enables work to continue even at temperatures as low as 16° below freezing

from your merchant NOW

J. FREEMAN SONS & CO. LTD., Cementone Works, SW18

SCOTTISH BUILDER

Housing in November

THE number of new houses completed in Scotland in November was 2,137. This brings the total of completions this year to 25,282, an increase of 504 over the same period last year .

The monthly housing summary of the Department of Health for Scotland and the Ministry of Housing and Local Government is obtainable from HM Stationery Office, price 3d.

Of the 406,325 houses built since the war in Scotland 367,314 have been built by public authorities and 39,011 by private builders.

Scotland's New Factories

THE INDUSTRIAL ESTATES MANAGEMENT CORPORATION FOR SCOTLAND are at present building new factories or extensions to existing factories which will give work to about 12,000 persons, many of whom are likely to be recruited before 1962. This was stated recently in Glasgow by SIR ROBERT MACLEAN, chairman of the corporation, when he reviewed the organisation's activities since April and outlined their probable contribution to the economy in 1961.

In the past 12 months, Sir Robert said, they had started to build 1,707,000 sq. ft. of new factory space—more than double the previous year's figure. Approval had also been given by the Treasury for another 200,000 sq. ft. which was not yet under construction and, in addition, applications for factories in Scotland totalling nearly 300,000 sq. ft. were awaiting approval in London.

Road Construction

TWO COMPLEX fly-over junctions within a distance of two and a half miles are included in the Scottish Home Department's plans for the Beattock diversion on the Glasgow-Carlisle trunk road. Mr. John Maclay, Secretary of State for Scotland, has authorised the expenditure of £622,000 on the scheme. The project involves five bridges—two fly-overs for grade separation of traffic, two railway bridges, including one 240 ft. long across the main line, and a bridge across the Evan Water near Beattock village. Further improvements are planned for the Glasgow-Carlisle road.

University Buildings

IN CONNECTION with the building programme at Glasgow University, the following appointments have been made. Messrs. Harvey & Scott, architects, of Glasgow, are to design a building in the Hillhead area to house the social science departments, and Professor F. Fielden, of the Dept. of Architecture of the Royal College of Science and Technology, Glasgow, is to design a university refectory to be built near the university reading room. Messrs. Keppie, Henderson & Partners, Glasgow, are to design within the recently acquired Gilmorehill Church

a suite of rooms for university uses. They will also design a new building for general student use to be erected on a site adjoining the Men's Union.

Development at Paisley

PAISLEY, which up to date has 8 fifteen-storey blocks, is planning several more 20-storey blocks. Three 20-storey blocks are to be built in Glen-street in 1961 and more are to be included in the Great Hamilton-street redevelopment. The blocks at Glen-street will be built on piles, owing to the nature of the ground, and will cost an estimated £600,000.

Factory Negotiations

MIDLOTHIAN County Council's Planning Committee has authorised the County Clerk, Mr. J. McBoyle, to enter into negotiations with Ferranti, Ltd., electronic engineers, for the setting up of their proposed factory at Thorniebank, near Dalkeith.

Mr. McBoyle said the factory, costing between £145,000 and £150,000, would be provided by the county council and rented to Ferranti.

New Buildings

ABERDEEN CC.—Lower Dee Valley drainage scheme: Construction of 14,600 lin. yd. of 6 to 36in. dia. fireclay and concrete sewers; 500 lin. yd. of 12 to 27in. dia. steel sewers, including 112 lin. yd. in open cut across the River Dee, and 185 precast concrete manholes, etc. Applications to County Surveyor, 4 Albyn-pl., Aberdeen. Dep. £20.

DUMFRIES ROYAL BURGH.—Construction in r.c. of main pool (203,000 gals) with basement flooring, spectator terracing, children's pool, framework and flooring of entrance block, boiler houses areas and portal framed vaulted roof over main pool. Applications to Babtie Shaw & Morton, 17 Blythswood-sq., Glasgow, C2.

FIFE CC.—(1) Kirkland sec. sch. Methil (approx. 82,500 sq. ft.). 'All trades.' (2) Lochore Housing 11th development—57 traditional houses and/or site preparation. 'All trades.' (3) New clinic at Kelty (approx. 6,000 sq. ft.). 'All trades.' Applications to County Clerk, County Buildings, Cupar.

GLENROTHES.—Cessno Aircraft Company of Kansas (Industrial Products Division) are awaiting Treasury approval to build an assembly plant at Glenrothes. The factory will produce components for agricultural and earth-moving machinery manufacturers and will initially employ some 40 workers.

KIRKCALDY CORPN.—Erection of 216 traditional houses at Chapel Level site. 'All trades.' Applications to Burgh Engineer, Town House, Kirkcaldy.

RUTHERGLEN.—TC has passed plans for the new Fernhill and Cathkin Church. Est. £33,000. Work is expected to start shortly.

THE BUILDER CONSTRUCTION NEWS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list, see previous issues. Those preceded by the symbol (A) are advertised in this number. The latest date for the receipt of tenders or applications appears above each paragraph. The symbol (R) preceding each entry indicates that applications must be received by this date.

BUILDING

JANUARY 6

(AR) ST. HELENS CBC.—Construction of proposed Derbyshire Hill county prim. sch. at Waring-ave. Gornall, Kelly & Ptnrs., architects, 155 The Albany, Old Hall-st., Liverpool 3. Dep. £2 2s. Tenders by Feb. 6.

JANUARY 9

(AR) PLYMOUTH CITY C.—(a) Erection of a sec. sch. at Devonport, and (b) erection of law courts in civic centre. City A. Dep. £3 3s. (each contract).

JANUARY 10

(AR) BIRMINGHAM CITY C.—(a) Eight dwellings and one shop at Pool Farm estate, Kings Norton; (b) 11 dwellings at Adams Hill, Bartley Green; (c) 12 dwellings at Bunbury-rd. estate, Northfield; (d) 12 dwellings and one shop at Deelands-rd., Rubery. City A. Dep. £2 2s. (each contract). Tenders by Feb. 10.

JANUARY 11

(AR) DURHAM CC.—(a) Erection of new branch library at Boldon, and (b) erection of a community centre at Felling Leam-la. County A.

JANUARY 12

(AR) GLOUCESTERSHIRE CC.—Fixed price tenders for a new sec. sch. at Berkeley. County A. Dep. £2 2s.

(A) HAVANT & WATERLOO UDC.—Fixed price tenders for a new pavilion and store at Emsworth recreation ground, Horndean-rd., Emsworth. E&S.

(AR) HUYTON-WITH-ROBY UDC.—Fixed price tenders for 10 shops and six flats, etc., at St. John's-rd. estate. Housing Dir.

(AR) MANCHESTER CITY C.—Fixed price tenders for modernisation of workshops and stores at Princess-rd. depot. Gen. Mgr. Tenders by Feb. 6.

(AR) SURREY CC.—(a) Erection of new fire station at Addlestone Moor, Chertsey, and (b) new fire station at St. Dunstan's Hill, Sutton. County A.

JANUARY 13

(AR) CROYDON CBC.—(a) Extensions to crematorium, and (b) erection of public mortuary and post-mortem accommodation. Boro' E. Tenders by Feb. 28.

JANUARY 14

(AR) CAMBRIDGE CITY C.—Erection of 99 houses at Arbury-rd. estate. City S. Dep. £3 3s. Tenders by Feb. 13.

(AR) ESSEX CC.—Firm price tenders for: (a) adaptations at Fryerns sec. technical sch., Basildon, and (b) extensions to Corbets Tey special sch., Upminster. County A. (separate applications).

(AR) ESSEX CC.—Firm price tenders for the erection of a mental health service hostel at Colchester. County A.

(AR) SWINDON BC.—Stage one of modernisation of swimming baths. Boro' A.

JANUARY 16

(AR) NORTHAMPTONSHIRE CC.—Erection of Rushden health clinic. County A.

(AR) SWANSEA CBC.—Erection of assembly hall at Swansea Training College. Boro' A. Dep. £5.

JANUARY 17

(A) BOURNEMOUTH CBC.—Fixed price tenders for conversion of 1, 2, 3 and 4 Southhill Gardens, Winton, into eight self-contained flats. Boro' A. Dep. £1 1s.

(AR) BRENTWOOD UDC.—Erection of 19 bungalows on three sites at Bishops Hall estate, Brentwood.

JANUARY 18

(AR) LUTON BC.—Erection of multi-storey car park. Boro' E.

JANUARY 19

CO. SLIGO (EIRE).—Erection of a new home and school, with ancillary works, at Gregg for the Sisters of La Sagesse of the Immaculate Conception. N. O'Kelly, chartered quantity surveyor, 133 Lr. Baggot-st., Dublin. Dep. £26 5s.

JANUARY 23

(AR) CANNOCK UDC.—Fixed price tenders for: (a) four houses at Rodhill-rd., Chadsmoor; (b) two bungalows at Pye Green-rd.; (c) 18 dwellings at Avon-rd.; (d) 16 dwellings at Ward-st., Hednesford. Council's A. Dep. £2 2s. Tenders by Feb. 13.

JANUARY 24

(A) BRADFORD CITY C.—Erection of 10 dwellings at Old Park-rd., Thorpe Edge estate. City E&S. Dep. £2 2s.

JANUARY 30

(A) AYLESBURY BC.—Erection of 96 houses, eight flats and 56 garages at Oakfield estate, Tring-rd., Aylesbury. TC Dep. £3.

(A) BOURNEMOUTH CBC.—Fixed price tenders for a new youth club at East Howe girls' sec. sch. Boro' A. Dep. £1 1s.

JANUARY 31

(A) EAST RIDING OF YORKSHIRE CC.—Erection of two police houses at Withernsea. County A. Dep. £2.

(A) GILLINGHAM BC.—Fixed price tenders for ten flats and one pair of houses at Wood-st., Brompton, Gillingham, Kent. Boro' E. Dep. £5 5s.

FEBRUARY 1

(A) FAVERSHAM BC.—Erection of 14 old people's bungalows and communal lounge, etc., at Upper Grents. Boro' S. Dep. £2 2s.

FEBRUARY 3

(A) MAIDENHEAD BC.—Firm price tenders for 31 garages at Larchfield and Spencers housing estates. Boro' E&S. Dep. £2 2s.

FEBRUARY 6

(A) HEREFORD CITY C.—Erection of 12 bungalows with garages at Hillside. City A. Dep. £2 2s.

(A) SALFORD CITY C.—Firm price tenders for proposed caretaker's house at Summerville Road county prim. sch., Salford 6. City E&S. Dep. £2 2s.

FEBRUARY 7

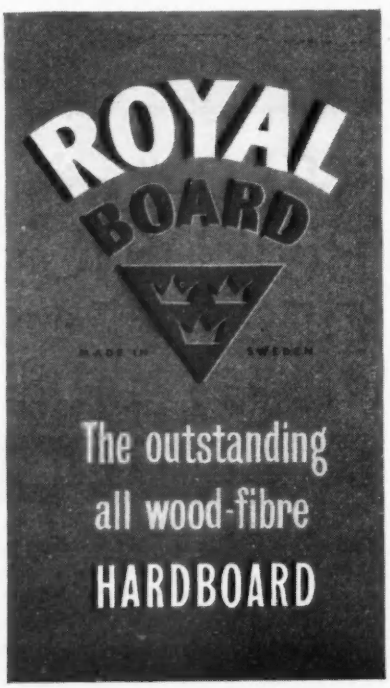
(A) EAST RIDING OF YORKSHIRE CC.—Extensions to Woldgate county sec. sch., Pocklington. County A. Dep. £2.

FEBRUARY 8

(A) READING CBC.—Firm price tenders for 24 flats and 27 garages at junction of Blandford and Whitley Wood roads. Boro' A. Dep. £2 2s.

FEBRUARY 10

ANTRIM COUNTY EC.—Proposed extension to Lisburn technical sch. (phase II). Lisburn, Co. Antrim. W. H. Stephens & Sons, quantity surveyors, 13 Donegall-square North, Belfast. Dep. £5.



FEBRUARY 16

(A) DARLINGTON CBC.—Phases 2 and 3 of new College of Further Education. Boro' A. Dep. £2 2s.

FEBRUARY 21

(A) EAST RIDING OF YORKSHIRE CC. —Extensions to Longcroft sch., Beverley.

FEBRUARY 22

(A) FARNHAM UDC.—Fixed price tenders for public conveniences at Victoria-rd. car park. Gilbert & Hobson, architects, 69 Castle-st., Farnham. Dep. £2 2s.

FEBRUARY 28

(A) EAST RIDING OF YORKSHIRE CC. —(a) Instalment of new sch. (Hemingbrough CP); (b) extensions to Brough CP sch.; (c) instalment of new infants' sch. at Cottingham, Bacon Garth. County A. Dep. £2 (each contract).

MARCH 10

(A) EAST RIDING OF YORKSHIRE CC. —Adaptation of former convent to form offices at Beverley Sessions House. County A. Dep. £2.

SERVICES, PAINTING, MATERIALS, ETC.

JANUARY 9

(AR) SOUTHAMPTON CBC.—Internal redecoration of blocks 1 and 2 at the Technical College, St. Mary-st. Boro' A. Tenders by Feb. 6.

(AR) NORTHAMPTONSHIRE CC. — (a) Low pressure hot water heating, domestic hot and cold water installations, or (b) electrical installation for new health clinic at Rushden. County A.

JANUARY 20

(A) OLDHAM EC.—Structural alterations and additions to premises at Werneth county jun. sch. and Werneth county infants' sch. Cameron & Middleton, quantity surveyors, 21 Queen-st., Oldham. Dep. £2 2s.

JANUARY 24

(A) EAST RIDING OF YORKSHIRE CC. —Fencing and site works at Kirk Ella CoE sch. County A. Dep. £2.

JANUARY 27

(A) WANSTEAD & WOODFORD BC.—Painting of street lighting columns. Boro' E. Dep. £2.

JANUARY 28

MANSFIELD BC.—Materials. Boro' E&S.

JANUARY 30

(AR) LONDON CC.—Inclusion in approved list of structural consultants. Clerk to Council.

(A) STEPNEY MBC.—Reinstatement of damaged faience and sundry repairs, etc., to exterior wallsurfaces of municipal offices at Commercial-rd. Boro' E&S.

FEBRUARY 4

(A) ABERYSTWYTH.—Firm price tenders for erection of new façade to Shiloh Chapel, North Parade, Aberystwyth. R. E. Bonsall, chartered architect, 23 North Parade, Aberystwyth. Dep. £2 2s.

FEBRUARY 8

(A) BUSHEY UDC.—Improved dressing accommodation at swimming baths, King George recreation ground. Dawe, Carter & Ptnrs., chartered architects, 33 Clarendon-rd., Watford, Herts. Dep. £2 2s.

FEBRUARY 14

(A) BOURNEMOUTH CBC.—Fixed price tenders for relaying of pavilion ballroom floor. Boro' A. Dep. £2 2s.

MUNICIPAL AND CIVIL ENGINEERING WORKS, ETC.

JANUARY 18

BARNET UDC.—Laying of approx. 3,200 lin. yd. of stoneware pipe soil and sw sewer of 6 to 12in. dia., etc., at Barnet Gate-la. E&S.

JANUARY 20

HAVERFORDWEST RDC.—Fixed price tenders for provision and laying of approx. three miles of 3 in. asbestos-cement water mains, etc. S & Water E.

JANUARY 23

SLOUGH BC.—Construction of roads and sewers on Parlaunt Park housing estate, comprising approx. 45,000 sq. yd. of concrete carriageway foundation and asphalt base course surfacing; 13,000 lin. yd. of PC kerbing; 5,000 lin. yd. of cast-iron, concrete and stoneware sewers from 9in.-18in. dia.; manholes, street lighting and ancillary works. Boro' E. Dep. £2 2s.

Contracts Placed

We are glad to receive from architects and quantity surveyors for publication details of contracts placed to the value of £20,000 or over. Such information should reach the Editor as soon as possible after the contract is signed. Names of the architect and other consultants associated should be given.

JANUARY 30

WOKINGHAM RDC. — Extensions to Marsh Farm sewage disposal works at Earley, nr. Reading. Howard Humphreys & Sons, constg. engrs., West-st., Epsom, Surrey. Dep. £5 5s.

JANUARY 31

MIDHURST RDC.—Fixed price tenders for the construction of 6,250 sq. yd. of car park, access roads and footways, together with ancillary works, and approx. 270 lin. yd. of 9in. dia. asbestos-cement sewer at Grange-rd., Midhurst. E&S. Dep. £2 2s.

FEBRUARY 6

MACCLESFIELD CORPN.—Construction of two r.c. reservoirs (1 m. capacity). Herbert Lapworth Ptnrs., constg. engrs., 25 Victoria-st., SW1. Dep. £5 5s.

GENERAL BUILDING WORK

(LONDON)

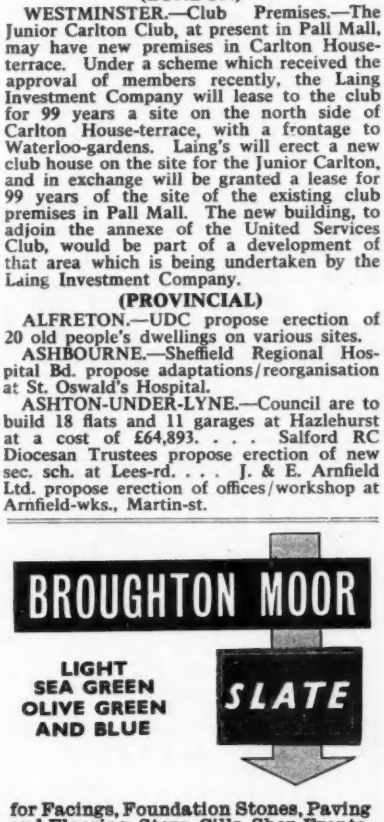
WESTMINSTER.—Club Premises.—The Junior Carlton Club, at present in Pall Mall, may have new premises in Carlton House-terrace. Under a scheme which received the approval of members recently, the Laing Investment Company will lease to the club for 99 years a site on the north side of Carlton House-terrace, with a frontage to Waterloo-gardens. Laing's will erect a new club house on the site for the Junior Carlton, and in exchange will be granted a lease for 99 years of the site of the existing club premises in Pall Mall. The new building, to adjoin the annexe of the United Services Club, would be part of a development of that area which is being undertaken by the Laing Investment Company.

(PROVINCIAL)

ALFRETON.—UDC propose erection of 20 old people's dwellings on various sites.

ASHBOURNE.—Sheffield Regional Hospital Bd. propose adaptations/reorganisation at St. Oswald's Hospital.

ASHTON-UNDER-LYNE.—Council are to build 18 flats and 11 garages at Hazlehurst at a cost of £64,893. . . . Salford RC Diocesan Trustees propose erection of new sec. sch. at Lees-rd. . . . J. & E. Arnfield Ltd. propose erection of offices/workshop at Arnfield-wks., Martin-st.



for Facings, Foundation Stones, Paving and Flooring, Steps, Cills, Shop Fronts, Surrounds, Pilasters, Fireplaces and all architectural work.

Send for technical pamphlets: 1. Floorings. 2. Facings. 3. Coping. 4. Cills. 5. Riven Faced Slabs.

The BROUGHTON MOOR GREEN SLATE QUARRIES Ltd.

CONISTON · LANCASHIRE

Telephone: Coniston 225/6 Telegrams: Quan, Coniston

BACUP.—Corporation are to build 16 one-bedroomed bungalows, 16 two-bedroomed bungalows, and 18 three-bedroomed houses at the Tunstead-rd. estate.

BAKEWELL.—RDC propose erection of 40 dwellings during 1961.

BARNSLEY.—Clarkson's Old Brewery (Barnsley) Ltd. propose erection of new PH at Ballfield-la., Darton.

BARROW-IN-FURNESS. — Barrow Steel Works Ltd. propose erection of office block/sub-station at steel works.

BASINGSTOKE.—RDC's housing programme for 1960/61 shows 23 dwellings to be built—17 at Basing and six at Sherborne St. John. 1961/62—36 dwellings at Basing. Provisional programme for 1962/63—40 houses, 16 at East Oakley and 24 at Sherfield.

BELFAST.—General planning permission for the erection of a multi-storey car park in the centre of Belfast has been granted by the Corporation's Improvement Committee to Olivetree Developments Ltd., London.

BERWICK.—F. W. Woolworth & Co. Ltd., Armour-hse., Lord-st., Liverpool 2, are to extend and modernise their shop premises at Marygate, Berwick.

BIRKENHEAD.—C. L. Gray Properties Ltd. propose erection of office block at Price-st. . . . Marcus Leaver & Co. propose erection of supermarket/shops at Woodchurch estate.

BLACKBURN.—BC propose erection of hostel at Burnley-rd., and an adult training centre at Gladstone-st.

BOLDON (Co. Durham).—MH&LG have approved UDC's layout plans for 50 terrace houses at Boldon Colliery. . . . Plans have been approved for the erection of a jun. sch. at Boldon-la., Cleadon, for Durham CC.

BOLLINGTON (Ches.).—The Exors. of Wm. Ferguson propose housing development at Bollington-rd.

BOLTON.—EC propose adaptations to St. Bede's jun. sch.

BRISTOL.—A new college of science and technology costing nearly £4m. has been approved in principle by Bristol Education Com.

BURNLEY.—The Michelin Tyre Co. propose extensions to existing factory at Heasandford. . . . EC propose erection of new sec. sch. for girls at Coalclough.

BUXTON.—Council have appointed the Homeville Co. Ltd. to prepare drawings and layouts for a further 50 houses on the Victoria Park estate.

CHANDLER'S FORD (Hants).—CC has submitted development application for erection of proposed branch library on site at 100 Winchester-rd., Chandler's Ford. Est. £16,000.

CHEADLE.—RDC propose erection of new civil defence headquarters.

CHESHIRE.—CC are to build a College of Further Education, estimated to cost about £500,000, at Bowlacre, in Hyde.

CHESHIRE.—EC propose erection of new county prim. schools at Alsager/Wilmslow/Macclesfield.

CHESTERFIELD.—AEI Lamp & Lighting Co. propose extensions to factory at Whittington Moor. Est. £1m. . . . RDC propose increased housing development at Tupton/Eckington/Halfway/Brackenfield/Grassmoor.

COLWYN BAY.—An extension to their factory at Mochdre, Colwyn Bay, is planned by J. K. Smit & Sons Ltd., diamond tool manufacturers. It is hoped that building will start in 1963. The present factory, costing £70,000, was opened in October.

CONSETT.—A. Watson Ltd., builders, Front-st., Whickham, propose 32 houses at Bridge Hill Farm.

CORK.—Corporation have adopted a recommendation that all practical steps be taken to increase the rate of building by the Corporation to 400 houses a year so that provision can be made for the housing of newly married couples.

DAWLEY.—UDC propose erection of 26 bungalows/garages at Parish Mound.

DERBYS.—North West Derbys. Ed. Exec. propose expenditure of £498,000 on sec. schs., £425,000 on prim. schs. and £7,040 on further education during 1961-62.

DEWSBURY.—BC propose housing development at Whitley/Foxroyd-la. housing estates.

ECCLES.—BC propose erection of multi-storey block flats at Mee's-sq.

ELLESMERE PORT.—Dutton & James Ltd. propose developing Hippodrome Cinema/Majestic Ballroom at Carnegie-st., into garage/showroom.

FAILSWORTH.—UDC propose erection of old age pensioners' settlement to include dwellings/club room/communal laundry/warden's quarters.

GATESHEAD.—John T. Bell and Sons, Ltd., builders and estate developers, Market-st., Newcastle-on-Tyne, are to include a new civic restaurant at the corner of High-st. and Park-la., Gateshead, in their development proposals.

GAWSWORTH.—Mr. J. Shaw proposes residential development on 6½ acres of land at Pennington's-la.

HASLINGDEN.—BC propose erection of 54 dwellings at Wilkinson-st. area.

HAYWARDS HEATH (Sussex).—Cuckfield Urban District Council has approved a two-phased extension to their offices.

HEALD GREEN.—RC Auth. propose erection of prim. sch. during 1963/64.

HEYWOOD.—BC propose erection of old people's dwellings/communal rooms/warden's quarters at Springfield House, Manchester-rd.

HYDE.—Ches. EC propose erection of College of Further Education on Bowlacre site. . . . Ches. EC propose replacement of Gee Cross CP sch. with new school at Smithy Fold.

HYTHE (Hants).—New Forest Planning Committee has granted outline permission for use of about 2 acres on Langdown estate, Hythe, for erection of 12 shops with maisonettes above, 8 houses, 32 flats and 33 lock-up garages.

JARROW.—William Leech Ltd., builders and contractors, St. James-st., Newcastle-on-Tyne, are seeking permission to erect houses in the Breamish-st. area. . . . Boro' E has prepared a scheme for the erection of 109 houses and three shops in the Lord-st. area.

KEIGHLEY.—The Board of Governors of Malsis School propose erection of swimming bath/chapel/assembly hall/gymnasium at Cross Hills. Est. £76,000.

KENDAL.—Lunesdale Farmers Ltd. propose erection of egg packing station at Mintsfeet.

KINGSCLERE & WHITCHURCH (Hants). —MH&LG has agreed to extension by 20 houses of 1960 programme to total of 70 dwellings.

LANCASTER.—Lancs. EC propose extensions to girls' grammar sch. at Queen-st. . . . Blind Welfare Centre seeking site for new headquarters.

LEEDS.—Circuits Management Association Ltd. propose converting Gaumont Cinema into bowling alley. . . . Following for TC: 50 dwellings/37 garages at Oldfield-la.; 48 dwellings/19 garages at area D, Swinnow estate.

LIVERPOOL.—Liverpool Council of Social Service propose erection of family welfare centre at Cherryfield-drive, Kirkby. . . . Regional Hospital Bd. propose following Hospital extensions; occupational therapy dept. at Rainhill, £48,745; radiotherapy extensions at Clatterbridge, £80,927 est.; X-ray dept. at St. Helens, £22,863 est.; operating theatre at Clatterbridge, £15,195 est.; Thoracic surgery unit at Broadgreen, £93,041.

LYDIATE.—Lancs. EC propose erection of county jun. sch. at Northway.

LYTHAM ST. ANNES.—Lytham Industrial Estate Ltd. propose redevelopment at Lytham Shipyard. . . . 19 bungalows at Elswick-place/4 detached bungalows Singleton-ave. proposed for Matthew & Turner Ltd. . . . 8 flats/garages at Blackpool-rd., proposed by Anderson & Moss. . . . John Halstead Ltd. propose 4 bungalows/garages at Crosland-rd., North, and 8 detached bungalows/garages, at Folkestone-rd.

MACCLESFIELD.—Geigy Pharmaceutical Co. Ltd. propose erection of industrial premises on 21 acre site at Hurdsfield industrial estate. Est. £2m. Work to commence in spring.

MANCHESTER.—Hope & Anchor Breweries Ltd. propose erection of admin. block/storage depot/flats, after demolition of existing, at Openshaw Brewery, Gorton-la. . . . Fr. John Jukes, OFM, proposes extensions to St. Clare's RC prim. sch., Blackley. . . . SB Harbour proposes erection of seven 2-storey shops at Stockport-rd., Longsight. . . . Morrison's Associated Companies propose reconstruction to form offices/shops at Market-st./Pall Mall. . . . Factory & Commercial Holdings Ltd. propose erection of showrooms/offices/licensed premises at Princess-st. . . . Cambridge Instrument Co. Ltd. propose erection of offices/showroom/maintenance depot at Lord-st., Cheetham. . . . Hydes 'Anvil Brewery' Ltd. propose new hotel at Greenwood-rd., Wythenshawe. . . . Hope & Anchor Breweries Ltd. propose new PH, 'Maple Leaf,' Maple-rd., Brooklands.

MATLOCK.—Derbys. EC propose extensions to science block at Training College.

MIDDLESBROUGH.—EC approved sketch plans for proposed community centre and library at Harehills-rd., Whinney Banks. Cost will be £56,000. . . . During 1961 the TC expects to start work on the erection of bungalows, flats, and flatlets at Westerdale-rd., Berwick Hills; five shops and ten flats at Easterside; and 185 houses at Ormesby. Plans are by Boro' E. (J. A. Kenyon).

NEWCASTLE-ON-TYNE.—City C is to spend £45,000 on the erection of a sports pavilion at Bullocksteads. Sketch plans have been approved for submission to the MoE. City Architect is G. Kenyon. . . . New workshops and offices are proposed in George-st. for Black and Decker Ltd. Architects are M. and H. Gatoff, 26 Mosley-st., Newcastle-on-Tyne. . . . The United Newcastle Hospitals are to convert hospital block into laboratory at Framlington-place, Newcastle. Architects are P. J. Stienlet and Son, 4 Queens-sq., Newcastle.

NORTHWICH.—Ravenseft Properties Ltd., London, propose development of Central Methodist Church premises for business purposes. . . . UDC propose housing development on 72 acres of land at Thorn Farm, Hartford.

NORTHUMBERLAND.—CC is to build a jun. sch. at Shiremoor at a cost of about £58,000.

NOTTINGHAM.—Tesco Stores Ltd. propose supermarket conversion scheme at Black Swan Hotel, Goose Gate. . . . Tennant Bros. Ltd. propose erection of PH at junction of Wells-rd./Kildare-rd. . . . TC propose erection of new civic theatre, 'The Playhouse,' at Wellington Circus. Est. £300,000.

NURSLING (Hants.).—Mr. P. C. V. Barker-Mill has submitted application for use of land at Old Nursling Sch., Nursling, for erection of flats, maisonettes and shops.

OLDHAM.—Corporation are to build 27 flats costing £34,300 at Acre-la., and 17 houses and 32 flats, with two shops and four garages at Littlemoor at a cost of £87,287.

PEVENSEY (Sussex).—Hailsham Rural District Council has granted outline planning permission to Brighton and District Property Trust Ltd. to erect 112 houses, flats, bungalows and maisonettes at Pevensey Bay; and for 70 dwellings at Westham, nr. Pevensey, by Mr. W. K. Martin, of Pevensey Bay.

PEWSEY (Wilts.).—RDC has agreed to capital programme, est. £1,341,000, in next four years.

RIPLEY.—UDC propose erection of 14 dwellings at Cedar-ave.

RISHTON.—Dunkenhalgh Estate propose residential development at North side Blackburn-rd.

ROCHDALE.—BC propose extensions at Mellor-st. depot. Est. £150,000.

SALE.—The Methodist Circuit propose erection of Sunday School/Chapel/Manse at junction of The Avenue/Wyncham-rd.

SALFORD.—The Royal Co-operative Collecting Society propose erection of shops/offices at Chapel-st. . . . TC propose erection of new fire station at Bury New-rd.

SHANNON (Eire).—At a meeting of Limerick City C recently, the chairman of the Shannon Free Airport Development Co. stated that the total number of houses to be built at Shannon by 1965 would be 1,059.

SHREWSBURY.—Fletcher Estates Ltd. have purchased the 65-acre estate of Old Heath Farm, Harlescott, Shrewsbury, of which 37 acres are already scheduled for housing and 28 acres for industrial development. During the next five years they plan to build there about 400 houses priced from £1,875 to £2,600. Also planned is a community centre for residents.

STAFFS.—EC propose erection of following new schools: Limepit-la. county jun., Cannock Chase, £52,480 est.; Bentley county jun., Darleston, £31,160 est.; Pear Tree county prim., Rugeley, £45,920 est.; Ashmore Park county prim., Wednesfield, £45,920; county sec., Lichfield., £188,754 est.; county sec., Pelsall, £155,384 est.; Pool Hayes county sec., Willenhall, £250,850.

STAFFORD.—TC propose erection of 120 houses/120 flats at Highfields No. 2 estate.

STOCKPORT.—BC propose erection of ambulance depot at Heaton-la.

STOCKTON-ON-TEES.—TC has received sanction to borrow £53,837 for the erection of six shops, ten maisonettes, rent office, and public convenience at Hardwick. . . . Imperial Chemical Industries Ltd., Billingham-on-Tees, are to erect houses at Crooksbarn-la. and Fieldfare-la., Norton.

SUNDERLAND.—Schemes are being considered by the EC for the erection of a comprehensive sch. on Hylton Red House estate to cost £580,000, and a RC sch. at North Hylton-rd. to cost £110,000.

TODMORDEN.—BC propose multi-storey flat development at Walsden.

UPHOLLAND.—UDC propose erection of 73 houses at Highgate estate. Est. £126,018. . . . Leigh proposes housing development at Higher-la./Cinnamon Brow. . . . James Gaskell & Sons Ltd. propose housing development at Sandbrook-rd.

UTTOXETER.—Staffs. CC propose erection of civil defence training centre during 1961-62.

CO. WATERFORD (Eire).—A proposal by the Eire Government to spend £300,000 on making Passage East, Co. Waterford, a major fishing port has been approved by Waterford Harbour Commissioners.

WEDNESBURY.—BC propose residential development at Hydes-rd.

WEST RIDING.—EC propose extensions to Calder high sch., Mytholmroyd, £180,000 est.; and extensions to Todmorden gram. sch., £73,000 est.

WHITLEY BAY.—Boots the Chemists. Ltd., Nottingham, are to spend £24,000 developing their stores at Whitley Bay.

WIGAN.—RDC propose erection of 14 houses/eight flats for hospital staff at Wrightington Hospital for Hospital Management Com. . . . John Darwin proposes erection of eight sd houses at Broadhurst-la.

WIGTON.—RDC propose erection of 136 dwellings during 1961.

WINCHESTER.—City Electors are backing City Corpn. and Dean & Chapter in their joint promotion of a Parliamentary Bill to enable Trust Houses Ltd. to erect on Cathedral car park a 79-bedroom hotel. Est. £250,000.

TENDERS

(A) Denotes *accepted.*
(PA) Denotes *provisionally accepted.*
(RA) Denotes *recommended for acceptance.*
(AM) Denotes *accepted subject to modification.*
(GD) Denotes *accepted subject to approval by appropriate Government Department.*

AMERSHAM (Bucks).—Erection of showroom, garage and petrol filling station at Little Chalfont for Munn & Chapman Ltd. (A) E. S. Gates Ltd.

BEDLINGTON.—Erection of 16 flats at Cornwall-crescent for UDC. (*a*) Direct labour, £19,624.

BICESTER.—Erection of 74 'Homeville' houses and flats at Western development site for UDC. (A) F. J. Minns & Co. Ltd., Oxford.

BIRKENHEAD.—Erection of 11 houses, 10 shops and 12 garages, at Robert-st. area, and 84 flats at Thingwall Hall, both for BC. (A) Sir Robert Lloyd & Co. Ltd., Bromborough, Ches.

BLACKBURN.—Erection of 44 dwellings at Montague-st. for BC. (A) Direct labour.

BRADFORD.—Erection of Blessed Edmund Campion RC sec. sch. at Rhodesway, for Governors. (A) Marshall & Rushworth Ltd., Elland, Yorks.

BRINWORTH.—Laying of foundations and r.c. (precast and in-situ) structures for a 275 KV sub-station at Sheffield for Central Electricity Generating Bd. (A) Tarmac Civil Engineering Ltd. Est. £92,000.

BUCKS.—Following for CC: Erection of Amersham girls' grammar sch. (A) E. S. Gates Ltd., Amersham, Bucks. Erection of Chalfont St. Peter infants' sch. (A) E. S. Gates Ltd.

CHESTERFIELD.—Three-storey extension to Chesterfield glass works, for GEC Ltd. (A) Balfour Beatty & Co. Ltd., London.

CUCKFIELD.—Erection of 28 dwellings at Crawley Down for RDC. (A) Orchard & Peer Ltd., 32 Leopold-rd., Wimbledon, SW, £70,760.

DERBY.—Erection of fire station at Ascot-drive for TC. (A) Direct labour, £96,996.

DORKING.—Fixed price tenders for 29 dwellings at Hampstead-rd. for UDC. Howard V. Lobb & Partners, architects. Quantities by A. W. West. (A) W. H. Gaze & Sons Ltd., 19-23 High-st., Kingston-upon-Thames, £69,883.

DURHAM.—Further additions to Neville's Cross training college for CC. (A) Crudens Ltd., Musselburgh, Scotland, £134,000 (extension to existing contract).

FRIERN BARNET.—Erection of 50 dwellings and 18 garages for UDC. (PA) Gregory Housing Ltd., £74,281 (revised tender).

GATESHEAD.—General building work in connection with large new factory at Team Valley trading estate for Smith's Delivery Vehicles Ltd. (A) Leslie and Co., Woodland-rd., Darlington.

HALIFAX.—Erection of 208 flats for old people for CBC. (A) G. Wimpey & Co. Ltd., £296,383.

HASLINGDEN. — Extensions to The Parade, Helmshore, for Haslingden Industrial Co-operative Society Ltd. (A) G. Clayton & Sons Ltd., Waterfoot.

HAY.—Erection of ten 'Homeville' dwellings at Bronllys site for R.D.C. (A) F. B. May, Herefordshire.

HEMEL HEMPSTEAD.—(a) Erection of 15 two-storey houses at Wood-cres.; (b) alterations and additions at works depot, Cupid Green, for BC. Boro' E&S is A. H. Turner. Quantities by C. E. Ball & Ptnrs. (A) F. W. Sears & Son Ltd., 22 Two Waters-rd., Hemel Hempstead, Herts, £30,750.

HEMEL HEMPSTEAD.—Erection of 55 flats, eight houses and 38 garages, etc., at Warners End for Development Corpn. Peter Dunham, Widdup & Harrison, architects. (A) E. S. Gates Ltd., Amersham, Bucks.

HYDE (Ches.).—Erection of Oakfield county prim. sch. for BC. (A) Simms, Sons & Cooke Ltd., £48,712.

KENDAL.—Restoration and conversion of Abbot Hall, for The Lake District Art Gallery Trust. (A) Lowther Bros. Ltd.

KENT.—Erection of warehouse and boiler house at Chatham Paper Mill for Wm. Howard & Son Ltd. (A) Tarmac Civil Engineering Ltd. Est. £185,000.

LEEDS.—Following for TC: Erection of 96 dwellings at Belle-Isle, Gipton, Cardigan-la. and Moorside, and 228 maisonettes at Ebor Gardens, Lincoln Green and New Carlton. (A) N. B. Bell & Co. Ltd., Leeds, £146,577 and £466,065 respectively.

LEYLAND (Lancs.).—Extension to factory, etc., for Leyland & Birmingham Rubber Co. Ltd. (A) Leyland Construction Co. Ltd., Preston, Lancs., £125,000.

LIVERPOOL. — New headquarters at Derby-rd., for Fire Salvage Association of Liverpool Ltd. (A) Wm. Moss & Sons Ltd., Liverpool. Alterations to Edge-la. works for TC. (A) William Tomkinson & Son Ltd., Liverpool, £27,027.

(GD) LONDON (Admiralty).—Contracts over £4,000 in value: *Devonshire:* New administration block; Dudley Coles Ltd., Plymouth.

QUARZITE
A NATURAL STONE
SHELL HOUSE
LONDON
B·P HOUSE
LONDON
ARMOUR HOUSE
LIVERPOOL
HORNE BROS.
LIVERPOOL
MERCHANT NAVY
HOTEL SWANSEA
CADBURY BROS.
BOURNVILLE
FACINGS SUPPLIED BY
JOHN STUBBS
(MARBLE & QUARZITE) LTD.
LIVERPOOL 7
TELEPHONE ROYAL 4951

(GD) LONDON (Air Ministry).—Contracts to the value of £4,000 or over for the week ended December 23 and 30, 1960: *Building work:* Stanbridge, Bedfordshire; David Chaston Ltd., Essex-rd., Hoddesdon, Herts. Stamford, Lincs.; A. Monk & Co. Ltd., PO Box No. 4, Stamford, Lincs. Hendon, Middx.; W. H. Streeter Ltd., Tudor-rd. Works, Hampton, Middx. Stanmore Park, Middx.; W. H. Streeter Ltd., Tudor-rd. Works, Hampton, Middx. St. Athan, Glamorgan; Sir Lindsay Parkinson & Co. Ltd., 6 Lambeth-rd., St. George's Circus, London, SE1. Bracknell, Berks.; J. M. Jones & Sons Ltd., Highway Works, Bath-rd., Maidenhead, Berks. High Wycombe, Bucks.; Y. J. Lovell (Bucks) Ltd., Marshamla., Gerrards Cross, Bucks. Horsham, Sussex; Y. J. Lovell (Sussex) Ltd., Bishopric, Horsham, Sussex. Chicksands, Beds.; Robert Marriott Ltd., Midland Works, Rushden. Northants. Tangmere, Sussex; Keith Andrew & Co. Ltd., 7 Warwick-st., Worthing, Sussex. RAF Stn. Boulmer (Brizlee Wood) Northumberland; Alex Anderson (Contractors) Ltd., 1 Stanmore-rd., Heaton, Newcastle-upon-Tyne, 6. Valley, Anglesey; Pochin (Contractors) Ltd., King-st. Works, Middlewich, Cheshire. *Artificers' work:* Finningley, Doncaster, Yorks.; C. Moyser & Son, Construction House, Wheatley Hall-rd., Doncaster, Yorks. Hemswell (Lincs.) etc.; H. Dorrington & Sons, Ltd., Spital-terr., Gainsborough, Lincs. Stansted Airport, Essex; M. & F. O. Foster & Co. Ltd., 23 York-rd., Hitchin, Herts. Watnall (Notts.) etc.; Hugh Cox and Son, Ltd., Fletcher-st., Heanor, Derbyshire. Melksham, Wilts.; Dudley Coles Ltd., 6/13 Bath-st., Plymouth. *Re-sheeting hangars:* Mount Batten, Plymouth, Devon; Maurice Hill Ltd., Blendworth-hse., Horndean, Hants. *Installation of central heating systems:* Cranwell, Lincs.; G. N. Haden & Sons Ltd., PO Box No. 14, 7/12, Tavistock Square, London, WC1. Benson, Oxfordshire; Edwd. Deane & Beal Ltd., Temple-cbrs., Temple-ave., London, EC4. *Conversion of boilers to oil firing:* Halton, Bucks.; The Freeman Heating Co. Ltd., 314 Balham High-rd., London, SW17. *Renewal of low pressure hot water heating mains:* Buchan, Aberdeenshire; Samuel Gibson & Sons, Ltd., 14/18 East Shaw-st., Kilmarnock, Ayrshire. *Sewage treatment plant (extension to project):* Bentwaters, Suffolk; Thomas C. Stewart (Contractors) Ltd., Industrial Estate, Newmarket-rd. Bury St. Edmunds, Suffolk.

(GD) LONDON (British Railways).—New London Midland contracts: Patent glazing for proposed diesel repair shop at Motive Power Depot, Birkenhead South; W. H. Heywood & Co. Ltd., Ashley-pl., London, SW1. Reconstruction of lift shafts and provision of new Sub-Station at Chester General Station; Edward Wood & Sons Ltd., Park-st., Derby. Supply and delivery of vitreous enamelled panels for prefabricated buildings between Liverpool and Crewe; Stewart & Gray Ltd., Swains-rd., Tooting Junction, London, SW17* Fabrication and delivery of steel work for bridges 61, 112 and 134 on the Trent Valley line; The Butterley Co. Ltd., Butterley, Derby.

* In connection with British Railways (London Midland Region) modernisation and electrification scheme.

(GD) LONDON (British Railways).—Contracts placed by Eastern Region: Provision of two storey pre-fabricated timber office block at St. James Bridge, Doncaster; Vic Hallam Ltd., Langley Mill, Nottingham. Provision of new roadways, drainage, loading docks, fencing gates and petrol storage and distribution facilities for the new district engineer's and signal engineer's workshops at Marshgate Yard, Doncaster; Charles R. Price, Barnsley-rd., Doncaster. Demolition of existing building and provision of foundations, drains, etc., for new prefabricated timber office block at St. James Bridge, Doncaster; Wellerman Bros. Ltd., Dun-st., Sheffield 3.

(GD) LONDON (Metropolitan Police).—Recent contract placed: Erection of flats at South Grove, Tottenham, London, N15; J. & J. Dean (Contracts) Ltd., Ruckholt-wks., 115 Ruckholt-close, Leyton, E10, £30,398.

(GD) LONDON (MoW).—Contracts placed for week ended December 17, 1960: *London:* Installation of oil fired boilers at British

Museum, WC2; Ruston & Hornsby Ltd., Post Office Box No. 33, Lincoln. Extensions and alterations to Sunnyhill telephone exchange, Finchley-la., NW; George Moss & Sons Ltd., Cranleigh Wharf, Lady Margaret-rd., Southall, Middlesex. *Somerset:* New sorting office and alterations at Post Office, Crewkerne; R. G. Spiller Ltd., High-st., Chard.

LUTON.—Erection of three wards and casualty and x-ray depts. at Luton and Dunstable Hospital for North West Metropolitan Hospital Bd. (A) Wm. Willett (Contractors) Ltd., £498,939.

MAIDSTONE.—Erection of 40 'Homeville' dwellings at Ringlestone estate for BC. (A) P. A. Barden & Sons Ltd.

NEWCASTLE-ON-TYNE. — Construction of clinic, garages, duty room, and one block of flats at Kenton estate for City C. (A) Urban Construction Co. (Newcastle) Ltd., 38 Side, Newcastle-on-Tyne, £21,711.

NEWTON.—Erection of Oakfield county prim. sch. for Ches. EC. (A) Simms Sons & Cooke Ltd., Nottingham, £49,519.

NORTHALLERTON.—Extension to nurses home at Friarage Hospital for Newcastle Regional Hospital Bd. Mortimer Ptnrs., architects. Thos. Barrett, Sons & Ptnrs., quantity surveyors. (A) Walter Thompson (Contractors) Ltd., £47,869.

NOTTINGHAMSHIRE. — Erection of physics and mathematics building at Nottingham University. Basil Spence & Ptnrs., architects. Messrs. Gleeds, quantity surveyors. (A) Richard Costain Ltd., £786,000.

OXHEY.—Erection of a social centre at Oxhey Park for Watford RDC. (A) Francis Jackson (Contractors) Ltd. Est. £89,765.

PLYMOUTH.—Erection of a single-storey factory with offices, etc., at Burrington for Cluett, Peabody & Co. Ltd. Designed by A. F. French & Ptnrs., in association with the City A (H. J. W. Stirling). Messrs. Gleeds, quantity surveyors. (A) Staverton Contractors Ltd., Devon, £38,711.

REIGATE.—Fixed price tenders for 12 maisonettes and two old people's bungalows, 14 stores and 12 garages at Colesmead-rd., Redhill for BC. (A) Garrad & Sons, Sandown-rd., Coulsdon, Surrey, £29,727.

ROCHDALE.—Erection of 95 dwellings at Kirkway, Kirkholt, and 88 dwellings and 24 garages at Shawclough for BC. (A) G. Wimpey & Co. Ltd., £296,526.

SEDGLEY.—Erection of 52 dwellings at Quarry Brow for UDC. (A) Gregory Housing Ltd., Worthing, £87,881.

SHEFFIELD.—Erection of 16 dwellings at Bradway estate for TC. (A) W. Redmile & Sons Ltd., Sheffield, £25,006. Erection of industrial premises at Mowbray-st. for John Bedford & Sons Ltd. (A) H. M. Blenkhorne & Son Ltd., Sheffield.

STEVENAGE (Herts.).—Erection of PH, 'The March Hare,' for Charrington & Co. Ltd. E. G. Francklow, architect. P. J. D. Mitchell, quantity surveyor. (A) Howard Farrow Ltd., London, NW11, £25,000.

STOCKPORT.—RC work at South West sec. mod. sch. for BC. (A) Fram Reinforced Concrete Co. Ltd., Manchester, £33,489.

SWANSEA.—New wholesale fruit and vegetable market for Messrs. S. J. Talbot Ltd. Henry A. Ellis & Son, Mardy-chbrs., 6 Wind-st., Swansea, architects. B. V. Ellis, 90 Mansel-st., Swansea, quantity surveyor. (A) Messrs. E. Turner & Sons Ltd., 31 Walter-rd., Swansea.

WARRINGTON.—New art room and gymnasium block at Richard Fairclough boys' sec. mod. sch. for EC. (A) Lowton Construction Co. Ltd., Lowton St. Mary's, £23,371.

WORKINGTON. — Housing maintenance depot for BC. (A) Border Engineering Contractors Ltd., Whitehaven, £24,853.

FEDERATION OF MASTER BUILDERS

UNITE FOR STRENGTH

THE FEDERATION OF MASTER BUILDERS

The Largest Individually Representative Organisation in the Kingdom

Membership Over 12,000

Regional Offices in: BIRKDALE BIRMINGHAM, BRISTOL, CAMBRIDGE CARDIFF, EDINBURGH, LEEDS, LONDON, NEWCASTLE AND SEVENOAKS OVER 130 BRANCHES

SUBSCRIPTION £6.6.0. p.a.

Service to members includes free monthly issues of the *Federation Journal*

THE FEDERATION OF MASTER BUILDERS
33 John Street, Holborn, London, W.C.1
Tel: CHANCERY 7583 (6 lines)

Please send particulars of the advantages of membership to

.....

.....

Kindly cut along dotted lines

6-1-61

BROAD-ACHESON
BLOCKS for
unvarying quality
PRODUCTION OF ALL SIZES NOW CENTRALISED AT GREENWICH WORKS
BROAD & CO. LTD. PADDINGTON, W2.

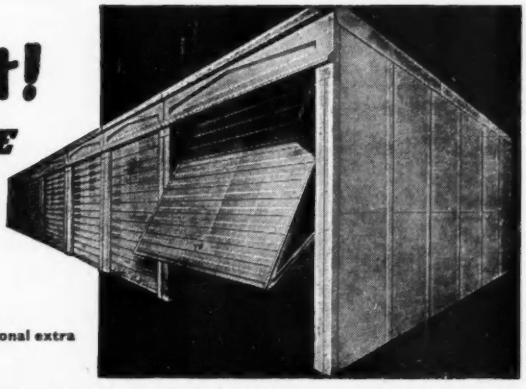
FLOORINGS OF ALL KINDS
WOOD BLOCK-PARQUET CORK
SOLID T & G HARDWOOD STRIP
Stevens & Adams Ltd.
POINT PLEASANT · WANDSWORTH · S·W·18
TELEPHONE: VANdyke 6666/8

THE ESSEX STEEL SCAFFOLDING Co LTD
SALES, HIRE
ERECTION
CRADLES
SMARTS LANE
LOUGHTON ESSEX
TEL: LOUGHTON 5022

a solid investment!
BATLEY
MULTIPLE CONCRETE GARAGES

Provide an unequalled investment and permanent source of income. Ideal for Housing Estates, Public Utilities, Hotels, etc. Rentals will cover repayments under our attractive deferred terms scheme.

- Free Advisory Service
- 3 Years' Guarantee
- Hinged or Up & Over Doors
- Purchased by over 300 Councils
- Wooden roller shutter doors optional extra
- Extensive Free Delivery Area



Write for illustrated brochure to:-
ERNEST BATLEY LTD.,
66 Colledge Rd., Holbrooks, Coventry · 89245

Also 66 New Islington, Manchester 4 & 123 Shepperton Rd., London, N.1.